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Abstract of Hunterian Lecture
ON
NON-UNION OF WAR FRACTURES OF THE MANDIBLE.

Delivered before the Royal College of Surgeons of England on Feb. 8th, 1918,

BY PERCIVAL P. COLE, M.B., F.R.C.S.ENG.,

HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS; HONORARY SURGEON, KING GEORGE HOSPITAL; ASSISTANT SURGEON, SEAMEN'S HOSPITAL, GREENWICH; ASSISTANT SURGEON, CANCER HOSPITAL; SURGEON, WEST HAM AND EASTERN GENERAL HOSPITAL.

THE fundamental principle that shapes the procedure of what may be termed the "ideal" school is the restoration of the normal arch and the maintenance of accurate occlusion. It is on these lines that our cases have been treated at the King George Hospital. Stress of work has at times forced us to adopt temporary expedients with unavoidable lapse from planned perfection. Apart from these failures, negligible both in number and degree, every patient discharged has been discharged with a normal arch and normal occlusion. The figures now brought forward have been arrived at by a careful survey of cases treated by Mr. C. H. Bubb and myself at the King George Hospital. The numbers are exclusive of cases sent to us for plastic repair and of cases transferred to us from other sources with residual non-union. The cases, in a word, are those which have come under our care immediately or soon after the infliction of their injury.

We have thus dealt with 270 cases. The total of ununited fractures numbers 30, an inclusive non-union percentage of approximately 11. Of these 30 cases union was in 12 absolutely hopeless, judged by no matter how exacting a standard. The resulting exclusive figure is approximately 7 per cent. These figures are, I maintain, apart from the means at our disposal for the rectification of non-union, ample vindication of ideal aims. My adherence to these ideal aims has been made known on several previous occasions.

[The causes of non-union were then considered, the periosteum itself being included in those tissues the interposition of which constitutes the factor preventing union. This interposing action of the periosteum is in full accord with the rôle assigned to it by Macewen and later confirmed by Hey Groves—its rôle as essentially a limiting membrane to bone.]

It is because union cannot be guaranteed where no substance has been lost, because conversely union does not necessarily fail where loss of substance is considerable, and because the vast majority of war fractures of the mandible do not exhibit clean-cut loss, but rather a condition of extreme comminution, that we have from the first espoused and rigorously carried out the "ideal" treatment.

The condition of comminution has an important bearing on union. Clinically, it is established that such fractures, even when compound, unite in a manner that is surprising, both as regards firmness and rapidity. Hey Groves, in his experimental work, has demonstrated this fact and made it the subject of express comment.

[The subject of bone-grafting was next dealt with, and the essential physical properties of the graft that make for success were discussed.]

Thus, then, the bone-graft succeeds because it is permeable and absorbable, because it is enabled by continuity of mass to prevent organisation of non-bone-forming connective tissues in the gap, and because it restores, by virtue of its solidity, the stimulus of stress to the separated bone-ends. It succeeds, in a word, by establishing exactly those conditions which have been shown to be necessary for union in the case of all fractures with or without displacement, with or without loss of substance.

THE FUNCTIONAL TEST.

The attainment of union is undoubtedly important in so far as it fulfils a functional demand. There is, however, no academic virtue in union apart from this, and therefore the ultimate and only test should be a functional one—the patient's ability to masticate ordinary foods. X ray photographs will not supply such necessary information. Indeed, subjective must take precedence of objective signs, though the latter may determine a strong *prima facie* case. It is precisely this personal factor that renders the measure of functional disability so difficult to estimate. That non-union, used in the strict sense of the term, is not incompatible with perfect function is as certain as that in some cases of obviously sound bony union the ability to masticate hard foodstuffs is denied. In general terms it may be stated that if to the one fragment both the masseters maintain attachment disability is relatively slight.

This functional estimate is obviously of importance from the point of view of treatment. It will be the deciding factor in determining the advisability of endeavouring by open operation to make good the functional defect. The extent of the functional defect and the improvement likely to follow operation should be duly considered. The operative result would appear to be somewhat of an unknown quantity. This is due partly to the distrust of such procedures which many dental surgeons display, and partly to the detached attitude sometimes assumed by surgeons in charge of such cases. The attitude of the surgeon fosters the distrust of the dentist, who tends to adopt ultra-conservative methods, content to suffer present ill rather than adventure worse to follow. Progress in this, as in many other issues associated with war injuries of the jaw and face, has been retarded by lack of proper collaboration between surgeon and dentist.

DESCRIPTION OF METHODS.

An endeavour will be made to present a fair, unbiased account of cases of non-union coming under the joint care of my dental colleague, Mr. Bubb, and myself. The methods employed have been as follows:—

Plating.

(1) Plating alone; (2) plating with interposition of fragmented bone.

Two cases have been dealt with, the lesion in both being non-union of a fracture of the ascending ramus. One case has been considerably improved, the other must be regarded as a failure. Plating has a very small sphere of usefulness in ununited fractures of the mandible, owing to the fact that necessary contact cannot be secured without traction. Wire is difficult to use with fractures of the ascending ramus, owing to the fact that the deep aspect of the fragments is so inaccessible. It is an open question whether fractures at or above the middle of the ramus are not better left alone. If operation is decided on a bone graft should be used if the defect is considerable. If the defect is very small, contact should be established and maintained by plates or wire.

Wiring.

(1) The buccal cavity being opened; (2) buccal cavity not entered.

It sometimes happens that in cases of old malunion with considerable deformity the only possible method of dealing with the fragments is to wire them immediately. The mouth cavity is necessarily opened in the course of reduction, but the risk in such a case is worth taking. Only once, in my experience, has such a course been necessary. The wire was removed subsequently; the functional result is perfect.

Cases suitable for wiring by the ordinary aseptic technique are those in which there is little or no loss of substance. These fractures occur, as has been pointed out, in the neighbourhood of the angle. The posterior fragment is left free. The anterior fragment, if not edentulous, is splinted in correct alignment. When the lower jaw is edentulous no splint is used. Cases have been treated in this way with consistent success. Where wiring is practicable, success may reasonably be regarded as certain.

Bone-grafts.

The position of the bone-graft is of all the problems associated with fractures of the mandible the most vexed. Little enough has been written as to the success attending the use of bone-grafts to remedy defects in the long bones. Still smaller are the available data with regard to their application to the mandible.

Albee claims 100 per cent. of successes, but his work is largely concerned with the treatment of recent fractures and the correction of spinal deformity. It is quite certain that nothing like this proportion of successes can be claimed when the object aimed at is the reconstitution of a bone which has suffered a loss involving its whole thickness. Eve reported five cases without indicating the results obtained. McWilliams, in reporting six cases, urges that repeated operations may be required, and should be persisted in till the desired result is attained. With that view I heartily agree.

Lindemann has published a series, numbering no less than 282. This literally colossal contribution suggests that the writer must have access to an enormous number of patients or that the percentage of non-union must be very high. So extensive is the ground covered, and such is the time required to treat effectively the numerous lesions grouped under the heading of War Injuries to the Face and Jaws, that concentration as regards cases of non-union might well be resorted to with good results.

There are certain peculiar difficulties associated with grafting in fractures of the mandible. The exposure of the fragments is always attended with a certain danger of opening the mouth. This danger is, I think, exaggerated; it has only happened to me once, and the operation was then promptly abandoned. The relatively small size of the bone, especially in old fractures, and the necessarily restricted area in which to work are difficulties much more formidable. Elaborate dovetailing is practically impossible, and I feel sure that people who reproduce diagrams illustrating such a procedure can never have attempted the operation on the living subject.

Free Autogenous Graft.

The necessity for the employment of a free graft presupposes loss of tissue of some extent. Such loss is frequently associated with coincident damage to the soft parts with the formation of a buccal

fistula of varying dimensions. The possibility that a graft may be required must be borne in mind from the time the treatment is begun. The necessary plastic operation must first be performed. This includes the closing of the fistula and the elevation of the soft parts to prevent their adhesion to the bone in the neighbourhood of the gap and to provide a sufficient thickness of soft parts to accommodate the graft.

The procedure will best be illustrated by the consideration of a concrete case.

A suitable splint was adapted to retain the fragments in correct position. A wide exposure of the area was then obtained by free reflection of the soft parts. The ends of the fragments were exposed, the mucous membrane of the floor of the mouth dissected up and united to the mucous membrane of the cheek. Under cover of this the bone-ends were shut off from the buccal cavity, and between them was inserted a piece of decalcified bone. The soft parts on the outer aspect of the bone were brought together in such a way as to raise the corner of the mouth and counter-drainage through a stab wound was established. The parts healed uneventfully.

Nutrition was promoted by radiations and massage, and the patient is now ready for the insertion of the graft. In order to eliminate the possibility of infection from latent sources of sepsis an interval of three months is allowed to elapse in such a case before the grafting operation is undertaken.

The technique adopted as regards the operation itself is as follows:—Two or three days before, upper and lower cast-metal cap splints are cemented in place. These splints are provided with bilateral overlapping threaded flanges, which, when fixed together by screws, determine the position of the fragments in correct alignment. When the patient is on the operating-table these screws are removed, allowing the mouth to be freely opened for the passage of the intratracheal catheter. As soon as the catheter is passed the screws are replaced. It will be noticed that the jaws so disposed are in the open-bite position. This position is essential if intratracheal methods are employed. The anæsthetist is then isolated from the operation area.

A curved skin incision, extending well into the neck, is then made and a flap turned up to expose the site of the fracture. Bleeding vessels are ligatured and towels are then clipped to the skin margins. The ends of the fragments are then exposed, cleared, freshened, and shaped for the reception of the graft. The graft when taken, as is usually the case, from the tibia is then cut, the length and shape being determined by the use of calipers and a pattern cut in sheet lead. The plates are screwed to the graft before the detaching cross-cuts are made. The graft with detached plates is then transferred to its destined site, and fixed in the gap by two screws attaching each plate to the corresponding fragment of the fractured mandible.

We have always acted on the assumption that fixation of the fragments and fixation of the graft are conditions essential to success. Efficient fixation there must be. If this can be attained by means other than by the use of metal plates, or wires, so much the better. It is in certain situations, and under certain conditions, possible to fix a graft by wedging, with the assurance that such fixation will be adequately maintained. There are, however, a large number of cases in which such fixation is totally impossible. It will be shown that the success of the graft is in no wise jeopardised by the use of metal plates.

The procedure as regards the treatment of the periosteum has varied. Where tibia has been used no attempt has been made to preserve the periosteum. On the rare occasions that a rib has been deemed more suitable the periosteum has been retained on the outer aspect. As far as is known, no difference in behaviour has been determined by the presence or absence of this membrane.

Ten cases have been operated on by the use of free grafts in the manner described. The length of the graft has varied from 2½ to 6½ cm.

In two cases suppuration occurred with subsequent extrusion of the whole graft. In both cases insecurity of fixation was the causative factor. In one case the electric motor broke down, necessitating the use of the hand-drill. The splint was thereby strained to such an extent that in a few days it gave way, thus allowing free play to the previously fixed posterior fragment. Even in these cases, however, the area of the gap has been considerably diminished by the growth of new bone. To such an extent has this occurred in one case that wiring has been rendered practicable, as I know from direct inspection of the fragments. The other case can now, owing to diminution in the size of the gap, be dealt with by means of a pedicled graft.

In three of the remaining cases localised infection occurred. In one case the tissues overlying the graft were very badly nourished, and a sinus developed several weeks after operation. In the other cases lobules of the parotid were wounded in exposing a very deeply placed posterior fragment. A salivary fistula, with inevitable infection, occurred. In neither case has infection determined failure.

In three of these cases sufficient time has elapsed since operation—10 to 12 months—to permit a just assessment to be made on the results obtained. Of five cases whose fate is known, three have been completely successful. Of the remaining five, progress has been such, as compared with known successes, that at the very minimum a percentage success of 60 is practically assured. It must be emphasised that the failures occurred in the earliest cases, and are ascribable to known causes. Every case subjected to grafting has been one presenting a condition of floating non-union, and no selection whatever of cases has been exercised.

Pedicled Grafts.

It is obvious that the use of free grafts is open to many forceful objections. The graft consists of a devascularised fragment. Its exact mode of action is for this very reason not definitely settled, in spite of the wealth of research expended in endeavours at elucidation. It is for this same reason peculiarly susceptible to sepsis. The employment of bone possessing its own independent blood-supply is, on practical and theoretical grounds, infinitely preferable—theoretically, because no doubts can arise as to its mode of action; practically, because results will be more certain and more rapid. These advantages will accrue provided that coincident disadvantages do not outweigh them.

The pedicled graft has been employed in the case of the limbs, and occasionally to make good defects in the jaw. In the latter case clavicle, sternum, and rib have been utilised, the pedicle being planned according to the source of the graft and the position of the defect. In addition, small fragments of the jaw itself, pedicled on periosteum, have been employed. It is obvious that the applicability of this latter procedure must be very limited and it scarcely deserves to rank in the category of pedicled grafts. Owing to technical and other difficulties these operations have not found favour. The appeal of the pedicled graft, however, as a sound surgical measure cannot be denied.

My attention has been constantly directed to the remarkable way in which union occurred in comminuted fractures of the mandible. Particularly striking were a series of cases in which a large fragment of the basal margin was apparently completely detached. So consistent were the results that union could confidently be predicted in such a case even when considerable loss had occurred in the overlying parts of the bone. A consideration of the anatomy of this portion of the bone (or, to be accurate, that portion lying in front of the masseter) indicated that to its lower margin was attached the deep cervical fascia, to its outer surface the platysma, and to its inner surface near the symphysis the anterior belly of the digastric. It seemed clear both on clinical and anatomical grounds that this portion could be detached and utilised as a pedicled graft.

The first operation carried out on these lines was performed in June, 1917. The feasibility of the procedure was clearly demonstrated. Other operations of this nature have followed, and improvements in technique have been evolved. Months must elapse before errors are demonstrated; months must elapse before it can be determined whether or not remedial measures have succeeded. In my first cases contact between the pedicled graft and the freshened fragments was maintained by absorbable sutures, first catgut and then kangaroo tendon. It was found that union of the graft with the posterior fragment had failed owing to the pull of the muscular pedicle. In three cases exhibiting this defect the fracture area has been again exposed. Union of the graft with the anterior fragment was so perfect as to escape detection. Posteriorly fragment and graft were separated by fibrous tissue. The graft and fragment were refreshened and wired together. It is obvious that a secondary operation of this nature must diminish the chances of complete success. To remedy this error in technique contact is now maintained by means of silver wire. The procedure adopted is as follows:—

The skin incision is made extending well into the neck reaching a lower level in front than behind. A flap consisting of skin only is raised to the requisite level. The posterior fragment is thoroughly exposed. The extremity only of the anterior fragment is exposed, so that the extent of the gap may be gauged. An incision is then made through the soft parts clothing the outer aspect of the anterior fragments at a level immediately below the buccal sulcus. The basal margin of this portion of the jaw is then sawn off. The periosteum on the inner aspect of the fragment is incised. Lateral incisions through platysma and deep fascia are made to define the pedicle, which is then gently dissected from the underlying structures.

The graft is thus freed to an extent sufficient to allow easy adaptation in its new position. The posterior fragment is now freshened to provide as broad a surface of contact as possible. Anterior and posterior fragments are now drilled for the passage of a fine silver wire. The wires are passed through the pedicle, surround the graft, and, when tightened and twisted, ensure snug contact between graft and freshened fragments. The soft parts are brought together with a few catgut sutures and the skin is sewn up. A drainage-tube is inserted and retained for 24 hours. It is scarcely necessary to add that the same type of splint is utilised as for a free graft.

The employment of such a pedicled graft to remedy defects in the mandible is, so far as I am aware, an entirely novel procedure. I have succeeded in thus detaching a thick, well-nourished bone fragment measuring 3½ cm. in length. The vast majority of ununited fractures occur on the lateral aspect of the mandible and exhibit a gap rarely exceeding 3 cm. in length. This operation, then, enjoys a wide range of applicability, and constitutes, I submit, a considerable addition to the methods of treatment at our disposal. I have as yet not employed bilateral pedicled fragments as a means of remedying non-union at the symphysis, but shall certainly do so when occasion arises. Free grafts are now only used in cases where the gap is too wide to be bridged by a pedicled graft.

Eight cases have been dealt with in the manner above detailed. In four of these absorbable sutures were employed, and in three of these, as before stated, a second operation was necessary. In the last and remaining four cases contact was maintained by wire sutures. In one case only has there been the slightest trace of sepsis. In this case some latent source of sepsis must inadvertently have been encountered. Considerable swelling occurred with discharge of blood-stained pus into the mouth, soon followed by the subsidence of all symptoms; the wound in the neck was not affected.

The results obtained by this method are rapid and certain. To such an extent is this so that in cases with non-union, amenable to treatment by means of a pedicled graft, success can be practically guaranteed. The first case of the series is not claimed as a complete success, but the causes of failure, as before noted, have been recognised and remedied.

SUMMARY OF RESULTS.

The results obtained by the operative treatment of non-union must be concisely summarised thus: 30 cases have been subjected to operation; in two cases the operation has been abandoned as impracticable.

Of the remaining 28 cases, 10 have been operated on too recently to permit of any definite statement as to the results obtained. Of the 18 cases whose fate is known 13 have been completely successful, 2 have been considerably improved, while the other 3 must be regarded as failures. Thus it will be seen that the percentage of success is over 70. There has been no mortality and post-anæsthetic complications have been entirely absent. In all but two cases ether has been administered by intratracheal insufflation, and the uneventful convalescence is entirely attributable to the skill exhibited in administration by Dr. Francis Shipway and Mr. Ramsey Phillips.

The results are such, in a word, as to justify the conclusion that no patient so afflicted should be discharged until operation has not only been offered to, but urged upon, him. The functional disability associated with ununited fracture of the mandible is, in the vast majority of cases, an unnecessary disability. It is a blot upon the escutcheon of surgery which we, if we be worthy devotees of the art, must determine to expunge

ON BONE-GRAFTING IN GUNSHOT INJURIES OF THE MANDIBLE.

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(*Preliminary Communication.*)

DURING the past two years more than 500 cases of injuries of the lower jaw have been under treatment in the 2nd Western General Hospital. The operation of bone-grafting has been performed on nine occasions, and has been advised but refused by the patient in at least an equal number of cases. The actual operations have been carried out by the first-named of the writers, the preliminary and after-treatment by splints being in the hands of the two latter named. We feel that upon the close coöperation of the surgeons and dental surgeons depends the success of this class of operation.

We have found that two distinct types of fracture exist in which the autogenous bone-graft can be used: (*a*) Where there has been a considerable loss of bony tissue with a resulting gap; and (*b*) where with comparatively close apposition of the fragments an unstable fibrous union has developed in spite of long-continued fixation by splints. In the first class of case the bone-graft fulfils the obvious mechanical function of restoring continuity; in the second class, where the osteogenetic capacity of the mandible in the immediate vicinity of the fracture has entirely disappeared, refreshing the bone ends is an absolute necessity if bony union is desired. In the course of any refreshing operation a small gap is inevitably produced and this can be conveniently bridged by a graft which, in addition to its mechanical function, affords a potent stimulus to osteogenesis in the bed in which it is placed.

Reports of Cases.

CASE 1. *Pte. J. R. F., age 25. Bilateral ununited fracture of the mandible.*—The man was wounded on Sept. 22nd, 1915, the lower jaw being penetrated on both sides. Healing was prolonged and several large sequestra were extruded. He was admitted to the 2nd Western General Hospital on March 17th, 1916, wearing a vulcanite interdental splint, which he had been accustomed to discard at night time.

Condition on admission.—There was a bilateral ununited fracture of the mandible with a palpable gap on each side. Radiograms and facial appearance together showed that the loss of bone had been extensive, especially on the left side. (Fig. 1.) A detachable metal Gunning splint was applied and worn for three months, but at the end of this period no change was noted in the condition of the fracture. The man's general condition was now, however, greatly improved. The operation of bone-grafting was decided upon, the right side being chosen for the first stage.

Operation (Sept. 26th, 1916).—Bone-graft, right side. A small, curved incision was made over the fractured region and the gap in the mandible exposed. The edges of the gap were refreshed and a graft consisting of the outer half of a vertically split rib (ninth) was inserted. The graft was 2 in. in length and had an intact periosteal covering on its outer side. The anterior end was wedged under a small bone-flap elevated from the mandible so as to expose the cancellous tissue. The posterior end was placed in contact with a broad area of cancellous bone exposed by chiselling off the superficial layers of the ramus. When the fascia and platysma were sutured over the graft the fixation was excellent. No sutures or other means of fixation were used. Healing of the wounds occurred without any untoward incident.

After-treatment.—Seven days after the operation the splints were wired together, and a week later screwed together. Three months from the date of the operation the splints were uncoupled, and an examination showed that there was now solid union on the operated side, with deviation of the mandible to the opposite side when the mouth was opened.

Present condition (14 months after the operation).—Firm bony union. Figs. 2 and 3 show the stages in the process of union and the changes in the graft.

Second operation (Feb. 2nd, 1917).—Bone-graft, left side. A technique similar to that used in the first operation was adopted with certain minor modifications. The remains of the ascending ramus showed extreme atrophy and feeble vascularity. A long split rib graft was inserted, the fixation being ensured by a bone-flap at the lower end and by wedging the upper end between the two tables of the ramus. The upper end of the graft reached to just below the sigmoid notch. Healing of the wounds proceeded uneventfully.

After-treatment.—A Claude Martin flange splint was applied, allowing vertical mobility but restraining any tendency of the right side and symphysis to move over towards the left. Three months later this splint was discarded, and a small lower denture was inserted five months after the operation.

Present condition.—Not yet rigid. Has subjective sensations of "bending" on left side when eating solid food.

CASE 2. *Pte. S., age 23. Ununited fracture of the body of the mandible.*—Date of wound, April 24th, 1915. Admitted to 2nd Western General Hospital on August 27th, 1916.

Condition on admission.—An ununited fracture of the mandible on the left side in front of the angle with a well-marked gap. (Fig. 4.)

Operation (Oct. 13th, 1916).—Exposure of the gap; refreshing of the bone edges; insertion of a split rib-graft fixed at each end under a bone flap.

After-treatment.—Eleven days after the operation the splints were screwed together. The man left the hospital and returned home to Barrow. He was not seen again until Jan. 27th, 1917, when an examination showed that bony union had taken place. It appeared that about six weeks after the splints were fixed they became loose, so that immobilisation was only effective for this period. Figs. 4 and 5 show the condition before and after operation and the unquestionable union of the graft and mandible.

CASE 3. *Cpl. S. B., age 28.*—Date of wound July 7th, 1916. Admitted to the 2nd Western General Hospital, Jan. 31st, 1917.

Condition on admission.—Wound healed with inconspicuous scar, non-union of a fracture of the body of the mandible on the right side with a small gap. (Fig. 6.)

Operation (Feb. 14th, 1917).—Exposure of the region of the fracture, refreshing of the bone-ends and insertion of a two-inch split rib graft.

After-treatment.—No form of splinting was used. Two months after the operation slight mobility at the site of the fracture; a lower denture was therefore made with the occlusal surfaces accurately adjusted to the "bite" in all lateral movements of the mandible. One month later there was solid union of the fracture. Fig. 7 shows the result five months after the operation.

CASE 4. *Pte. C., age 42.*—Accidental fracture of the body of the mandible sustained in France (August 2nd, 1916). There was a history of abscess formation at the site of the injury. Admitted to the 2nd Western General Hospital, Sept. 11th, 1916.

Condition on admission.—There was an ununited fracture on the left side in the region of the second molar. A sinus opened into the mouth at this site, and from this came a purulent discharge. A vulcanite intermaxillary splint (Gunning) was applied with the jaws in normal relationship and a stout bandage was worn. The sinus healed rapidly, but non-union of the fracture persisted. A radiogram showed a complete solution of the continuity of the mandible, but the gap was small and linear.

Operation (March 13th, 1917).—Exposure of the fracture; excision of the fibrous connexion and trimming of the bone edges; insertion of split rib-graft. The mandible was exceedingly sclerosed and brittle, so that the elevation of the fixation bone flaps was difficult to accomplish; in this manœuvre a small fracture was produced involving the alveolar margin anterior to the old fracture. Healing of the operation wound occurred by first intention; there was a little swelling and tenderness over the alveolar margin at the site of the new fracture, which lasted a few weeks.

After-treatment.—The vulcanite splint was reinserted 11 days after the operation, and six weeks later dentures were applied. Bony union was slow in developing, but after five months was undoubtedly present.

CASE 5. *Pte. T., aged 25.*—Date of wound Oct. 1st, 1916. Fracture treated by interdental wiring in France. Admitted to 2nd Western General Hospital, Nov. 18th, 1916.

Condition on admission.—An ununited fracture was present in the body of the mandible on the right side; there was considerable displacement at the site of the fracture. The large posterior fragment was easily reduced to a correct position, and was retained by an intermaxillary splint. A bridge of bone developed across the gap but failed to unite at the anterior end. (Fig. 8.) Splints with engaging flanges were applied, and the fracture was exposed at an operation and refreshing of the edges carried out. The man returned to hospital after extended furlough with the fracture still ununited. A bone graft was therefore decided upon.

Operation (July 4th, 1917).—Exposure of the fracture; trimming of the edges of the gap; insertion of a split rib-graft extending from the junction of the old bony bridge with the body of the mandible to well beyond the gap in front. The contiguous surfaces of the graft and the bone bridge were so bared as to bring broad cancellous surfaces in contact. (Fig. 9.)

After-treatment.—Ten days later the two splints were wired together, and this immobilisation was maintained for two months.

Present condition.—Five months after the operation. There is osseous union between the fragments. Dentures have been supplied. (Fig. 10.)

CASE 6. *Pte. P., age 35.*—Date of wound, August 11th, 1916. Before admission to the 2nd Western General Hospital (June 29th, 1917) he had been treated by the use of cap splints secured to the teeth by screws passing through the interdental spaces; this splint allowed rocking at the site of the fracture.

Condition on admission.—Ununited fracture of the mandible on the right side with a palpable gap. A new cap and band splint was applied and cemented on with Ames cement, giving perfect rigidity.

Operation (July 8th, 1917).—Exposure of the fracture and the usual refreshing; insertion of a graft taken from the inferior angle of the scapula.

After-treatment.—The splint has been retained up to the present date.

Present condition.—A radiogram shows further osseous deposit at the anterior end of the graft, but absorption at the posterior end. The splint will not be removed for some months so clinical examination is not possible, but the conditions are considered very favourable.

CASE 7. *Pte R., age 19.*—Date of wound Oct. 20th, 1916. Treated by the use of intermaxillary splints for eight months. Admitted to 2nd Western General Hospital August 4th 1917.

Condition on admission.—Ununited fracture of the body of the mandible on the right side with a small palpable gap. In the radiogram a tooth was seen standing in the line of the fracture. This was extracted and a new splint with flanges was made to bring the jaw into the correct position.

Radiograms showing Results of Bone-grafting in Gunshot Injuries of the Mandible. (From the Jaw Injuries Section, 2nd Western General Hospital, Manchester.)

FIG. 1 (Case 1). Condition before operation. Right side.

FIG. 2 (Case 1).—Eight days after operation.

FIG. 3 (Case 1).—One year after operation.

FIG. 4 (Case 2).—Before operation.

FIG. 5 (Case 2).—Six months after operation.

FIG. 6 (Case 3).—Before operation.

FIG. 7 (Case 3).—Five months after operation.

FIG. 8 (Case 5).—Before operation.

FIG. 9 (Case 5).—Three weeks after operation.

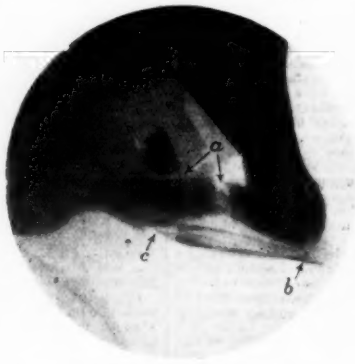

FIG. 10 (Case 5).—Ten weeks after operation.

FIG. 11 (Case 8).—One month after operation.

Operation (Sept. 9th, 1917).—Exposure and refreshing the edges of the gap; insertion of a graft taken from the subcutaneous surface of the left tibia. The graft had a good periosteal covering and included on its deep aspect an ample layer of cancellous bone. The method of fixation was to wedge the anterior end which had been trimmed, between the two tables of the mandible and to place the posterior end in contact with a bed of cancellous tissue exposed by chiselling off the outer layers of the mandible; the upper extremity of the graft rested in contact with a shoulder formed by the margin of the bared area.

After-treatment.—Ten days later the upper and lower splints were wired together.

Present condition.—The man was sent away on extended furlough three months after the operation. There was at this time a little mobility at the site of the fracture.

CASE 8. *Pte. C., age 22.*—Date of wound, April 9th, 1917. Admitted to 2nd Western General Hospital, May 5th, 1917.

Condition on admission.—Extensive loss of bony tissue in the body of the mandible on the left side with deflection of the larger fragment to the opposite side and facial deformity. Cap splints with intermaxillary rubber traction bands were applied and the correct occlusion of the teeth in the displaced fragment restored. An intermaxillary splint was next applied and immobility was obtained. Four months later a cap splint with engaging flanges was substituted, thus allowing restricted movement of the mandible.

Operation (Oct. 10th, 1917).—The large gap was exposed and the ends trimmed in the usual fashion. A long tibial graft was inserted, the fixation presenting considerable difficulty owing to the small wound and the rigidity of the graft. The bone-flap method could not be followed out in detail, but the two ends of the graft were laid in contact with cancellous surfaces prepared as in the previous operations. When the deeper layers of the wound were sutured the fixation of the graft was satisfactory.

After-treatment.—After ten days the splints were wired together, and this fixation was maintained for five weeks.

Present condition.—Clinically there is undoubtedly osseous union two months after the operation. Radiograms confirm the clinical evidence. (Fig. 11.)

Descriptions of Illustrations.

Fig. 1 (Case 1), right side.—Condition before operation. Note the gap, which is much smaller than the actual loss of tissue owing to the forward displacement of the ramus.

Fig. 2 (Case 1).—Eight days after operation. Note the graft *in situ*. The contact at the upper end appears poor, but the displacement is apparent and is due to the obliquity of the rays.

Fig. 3 (Case 1).—One year after operation. Note (*a*) the outline of the upper margin of the graft is still visible; (*b*) the strong bridge of bone superimposed on the graft and the direct continuity of bone trabeculæ from mandible to graft.

Fig. 4 (Case 2).—Before operation. Note the large wedge-shaped gap.

Fig. 5 (Case 2).—Six months after operation. Note bony union of the graft at both ends.

Fig. 6 (Case 3).—Before operation. Note the small rectangular gap.

Fig. 7 (Case 3).—Five months after operation. Note firm bony union of the graft at each end, and thin bridge of new bone (*a-a*) crossing the gap along the upper margin of the graft.

Fig. 8 (Case 5).—Before operation. Note the small gap between the anterior end of the new bony bridge and the anterior fragment; this is a secondary gap.

Fig. 9 (Case 5).—Three weeks after operation. Note the graft *in situ* extending from the posterior edge of the primary gap to the anterior fragment.

Fig. 10 (Case 5).—Ten weeks after operation. Note (*a*) the growth in the bony bridge resulting in increased width and the union in the secondary gap; (*b*) union of the anterior end of the graft; (*c*) apparent absorption of the posterior end of the graft. The action of the graft has been purely physiological.

Fig. 11 (Case 8).—One month after operation. Note the large dense tibial graft, the anterior end of which has slipped a little. There are early signs of actual bony connexion between the graft and the jaw at both ends.

Operative Technique.

At the present time there are wide differences of opinion as to the source from which a bone-graft should be taken. In our work we have used rib, scapular, and tibial grafts. Of these the rib presents many natural advantages, as one is able to remove with ease a graft which has an adequate periosteal covering, ample cancellous tissue as well as a cortical layer, and which is curved in much the same fashion as the mandible. Furthermore, the elasticity of the rib-graft renders its insertion and fixation easy, and this is especially the case where the bone-flap method of fixation is used.

Scapular grafts have the same advantages of accessibility, adequacy of cancellous elements, and malleability, but are much less stable than rib grafts of the same size.

The tibial graft removed with the twin saw is the most accessible of all, and its use is sometimes agreed to by patients who object to the removal of a piece of rib. If the graft includes a definite layer of cancellous tissue, as it must to be efficacious, it is somewhat bulky and unwieldy, the advantages of its unquestioned stability being counteracted by its lack of curve and elasticity.

With regard to the methods of fixation of a graft, we are confident that the avoidance of all foreign materials is an advantage. The bone-flap method gives perfect fixation, and the careful suturing of the deeper parts of the wound in layers contributes an additional support.

After-treatment.

Where it has been possible we have maintained immobility by splintage for some time after the operation in order to avoid strain on the graft. The Claude Martin flange-splint, as used in Cases 1 and 5, has proved of great value, especially in cases where the smaller fragment is edentulous. It can be used early in the treatment of the case, and whilst maintaining correct occlusion of the remaining teeth allows the patient the comfort of a free vertical movement. With correct occlusion all rocking movements are prevented. Complete immobilisation can readily be obtained by wiring the two rings in the upper and lower parts. The flanges are made with broad plates and a stop is provided to control the degree of opening the mouth.

Conclusions.

From such a small series of cases at the present stage no generalisations can be enunciated. The functional results in our cases have been such as to warrant the future employment of the operation of bone-grafting in suitable cases. The exact technique can only be standardised after a study of the remote results in a larger series of operations. The double function of the graft, mechanical and physiological, is well demonstrated in the series of radiograms accompanying this article. We present this series of bone-graft operations as a personal experience, without any comment on the contemporary literature, which is already voluminous.

UNILATERAL HYPERTROPHY OF MANDIBLE.

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TEMPORARY CAPTAIN, R.A.M.C.; SURGICAL SPECIALIST, CAMBRIDGE HOSPITAL, ALDERSHOT.

THE following case by reason of its great rarity deserves to be fully reported:—

Patient, private, aged 25, was transferred to Cambridge Hospital from overseas on account of deformity of lower jaw and inability to thoroughly masticate his food. He first noticed his lower jaw increasing in size some two and a half years ago; enlargement had slowly but steadily progressed since. About six months ago he began to notice some difficulty in eating owing to movement of jaw being limited and the teeth not closing together properly on left side. No history of injury to jaw.

On examination left side of mandible was greatly enlarged and prominent. Marked projections in region of condyle and at angle. Left zygoma enlarged and thickened and left malar bone was beginning to show similar changes. The left side of the jaw projected downwards to such an extent that patient carried his head turned somewhat to the right. No contraction of sterno-mastoid nor enlargement of lymphatic glands. No tenderness on palpation. The left side of the lower jaw was found enlarged in all dimensions, the overgrowth involving thickness of bone as well as length. It was firm and smooth to the touch; no bony overgrowths. Overlying structures healthy and not adherent to bone. No evidence of any increase in blood-supply to parts involved, nor any paralysis. The symphysis menti was displaced to the right, causing some deflection of cheek and mouth. The mouth could be opened to extent of ¾ inch. Measurements: From lower border of zygoma around greatest circumference of mandible to symphysis, right side 5¼ inches, left side 7⅜ inches. No sign of any other disease, no deformity or enlargement elsewhere, and patient's general health good.

Lieutenant R. Osborn Smyth, R.A.M.C., who took a series of X ray plates, reported a uniform general enlargement of all parts of left side of mandible with compensatory curve on right side. Bones in neighbourhood of condyle also hypertrophied to some extent. Shadow of bone normal; nothing in appearance to suggest a new growth.

Captain Jessaman, M.O.R.C., in charge of Throat Department, reported that nasal septum was deviated to right, and left middle turbinate enlarged. No pus in nose; mucous membrane normal. No pathological changes in accessory sinuses and nothing in that region bearing on bony change in zygomatic area. Ear negative.

I append a report on the patient's dental condition by Major T. Rankin, I.D.S., A.C.: "I have formed the opinion that the growth of bone is chiefly in the ascending ramus, and from external measurements I should say that the difference between the rami would be about 1g inches. The general dental condition of the man's mouth leaves much to be desired. He has no articulation on the left side and the space between the teeth of this side increases from No. 1 to No. 8. In my dental inspection of the troops, and I have inspected personally about 50,000 men, I have not seen a similar condition. I came across one case of excessive hypertrophy of the gum and mucous membrane of the mouth (upper and lower) at Blackdown in September, 1917, and one case of over-development of the whole of the mandible (Newcastle, March, 1917) which was evidently inherited more or less, as other members of the family were similar although not so pronounced. An American dental surgeon, however,

told me of a similar case admitted to Massachusetts General Hospital, Boston, in 1903–04. Considering the two cases I can only suggest, as neither had any recollection or marks of injury, and as there is no evidence of inherited tendency, and as the part had grown just at the probable period of eruption of the wisdom tooth (late adolescence), that the abnormal development of bone has been caused by the irritation set up by the erupting lower wisdom tooth, the growth thereby originating at the angle of the jaw."

Photographs illustrating a case of unilateral hypertrophy of the mandible.

Colonel Sir Arbuthnot Lane, who saw the patient, suggested that the plate and photograph should be sent to Mr. Shattock at the Royal College of Surgeons of England. Mr. Shattock very kindly wrote as follows:—

"The pathogenesis is a mystery, but we have in the College Museum a very similar specimen, of which I send you a short note. I fancy the skiagram gives some indication of enlargement about the condyle such as is present in the College specimen.

No. 2205. Specimen from middle-aged man who died of apoplexy. The right half of the jaw is larger in all its dimensions than the left half. There is a curious mass of bone somewhat like an inverted pyramid attached to the thickened neck of the right condyle process. There was a remarkable deformity of the face owing to the deviation of the symphysis from the middle line. The projection of the enlarged condyle was considerable. Nothing unusual had been noticed in childhood, nor could any account of injury be obtained. (Trans. Path. Soc., 1883, xxxiv., 187.)

2205A. Half of a similar enlarged left condyle. Removed by operation from a woman, aged 36, who suffered from increasing deformity of the face for 10 years. The chin was displaced to the right side and the left condyloid process was displaced outwards. The length of the left ascending ramus was 3 inches, that of the right 1½ inches. (Trans. Path. Soc., 1883, xxxiv.)"

The photographs give a very fair picture of this curious condition, and I should be very glad to hear from anyone who has met with a similar case. I should like to express my indebtedness to Mr. Shattock for his valued opinion and for the trouble he has taken in looking up the cases; to Colonel Sir Arbuthnot Lane for permission to publish this short note; and to Lieutenant-Colonel J. G. McNaught, R.A.M.C., officer in command, Cambridge Hospital, for permission to use hospital records.

ELECTRO-CARDIOGRAPHIC DEPRESSION PRODUCED BY DIGITALIS.

BY I. HARRIS, L.R.C.P. & S. EDIN., M.D.

(From the Cardio-therapeutic Department, David Lewis Northern Hospital, Liverpool.)

IN some electro-cardiograms I noticed a curious depression between R and T, which is peculiar to those from patients under the influence of digitalis. (Figs. 1 and 2.) The larger the doses of digitalis the more marked is the depression. In the diseased heart muscle digitalis produces it more easily.

In the average of my cases one drachm of digitalis per diem administered for a fortnight has produced this phenomenon, although in one case the depression was already marked after 5 min. of digitalis thrice daily for a week. The depression can always be produced by digitalis provided the doses are large enough. It is most marked in lead II.

What are these downward tendencies of the curve due to? The fact that the depression takes place when the ventricles are at the height of the systole suggests that this phenomenon has something to do with the intracardiac pressure. Theoretically there ought to be an increase in B.P. after digitalis. Animals and healthy human beings show an increase of B.P. after its administration, but not so the diseased heart; in fact, after a subcutaneous injection of 1/100 gr. of digitalin I often found not an increase, but a decrease. This disparity can only be explained by the diseased heart responding to increase of intracardiac pressure by dilatation.[1]

I think we are justified in assuming that the depression described is a consequence of the reaction of the heart to the rise in intracardiac pressure brought about by digitalis. This is also in conformity with the patient feeling unwell when that depression is marked. The fact that some cases where the depression is marked have not shown any great decrease in pulse frequency does not constitute any objection to this theory. Where the heart muscle is not equal to the work imposed upon it by a certain stimulus there results an increase in pulse frequency.

Some authorities maintain that digitalis can be administered in large doses with impunity because it does not produce that rise of B.P. in a diseased heart to which adverse results were formerly attributed. I think the contrary is true. In those heart cases which do not respond to digitalis by a rise of B.P. this drug must be administered with caution, since dilatation is the inevitable result of this disproportion between stimulus and muscular power. I think also that the modern cardiologists lay too much stress on reduction of pulse frequency in treatment of

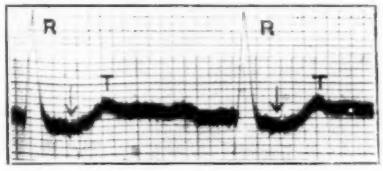


FIG. 1.—Electro-cardiogram of patient under the influence of digitalis. The arrow indicates the characteristic depression.

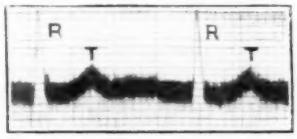


FIG. 2.—Electro-cardiogram of the same patient before administration of digitalis.

heart disease. The beneficial effect observed from digitalis is probably due to its tonic and sedative properties as in auricular fibrillation. The strain on heart muscle caused by rise of intracardiac pressure after administration of digitalis might, in some cases, be more harmful than the benefit derived from its tonic properties. Hence the uncertainty of the effects produced by digitalis in such cases as dilatation of the heart. There is a great deal to be said for the teaching of the old authorities, who recommend that digitalis should be administered with great caution. It should be given in as small doses as possible.

Strophanthus does not produce the same increase in intracardiac pressure and ought to be more generally prescribed in heart disease. When the depression is marked it is a sure indication that the digitalis ought to be discontinued.

[1] I use the word dilatation for want of a more exact term. I mean by it the abnormal strain which a high intracardiac pressure produces on the heart muscle.

WINSLEY SANATORIUM.—During 1917 the in-patients numbered 437, compared with 455 in 1916, but unfortunately the expenditure exceeded the income by £1611, a position which will require to be met with resolution.

BRISTOL GENERAL HOSPITAL.—During 1917 the in-patients numbered 3507, against 3483 in 1916. The ordinary income amounted to £19,460, against £16,644 in 1916. The expenditure amounted to £27,466 compared with £24,598 in 1916.

A PRELIMINARY NOTE ON THE

TROPHIC DISTURBANCES IN GUNSHOT INJURIES OF PERIPHERAL NERVES.

BY JOHN S. B. STOPFORD, M.D. MANCH.,
LECTURER IN ANATOMY, UNIVERSITY OF MANCHESTER.

(Report to the Medical Research Committee.)

THE vaso-motor, secretory, and trophic disturbances encountered in the study of injuries of the peripheral nerves are very diverse and extremely difficult to understand. Much confusion and delay has been caused by attributing their origin to concomitant vascular implication. A brief acquaintance with such symptoms as hypothermia and cyanosis or pallor of the distal part of a limb in arterial obstruction is sufficiently convincing, when compared with the more variable effects confined to the sensory distribution of an injured nerve, to demonstrate that the same etiology is not likely to be common to the two conditions. Furthermore, the modification in the vaso-motor manifestations immediately after neurolysis or resection and secondary suture, without any possible disturbance of any of the main arterial trunks, still more strongly supports the contention that uncomplicated nerve injury is responsible for very profound vaso-motor symptoms.

It is a common experience to find that vaso-motor and trophic troubles are outstanding features in many cases of incomplete division, where in gunshot wounds there is almost invariably evidence of nerve irritation. In the regeneration of nerves trophic sores are known to make their appearance usually at a time when sensibility to the prick of a pin is beginning to return to the affected part, and they generally heal rapidly with the complete recovery of protopathic sensibility.

Late Changes in Cases of Thermalgia.

In the light of the vaso-motor changes seen so well in thermalgia,[1] I have paid particular attention recently to the condition of the blood-vessels and associated state of the skin, muscles, joints, and bones in the field of distribution of all nerve injuries. The differences noticed in the colour, secretion, and temperature of the skin in different pathological states of the nerves are most significant. The conditions found in thermalgia, a true irritative lesion, have been most helpful. The points of special interest for the moment are the rosy red colour of the skin (confined very closely to the sensory distribution of the affected nerve), increased surface temperature, tumefaction, and fairly frequent hyperidrosis; at a later stage glossy skin, trophic sores, and decalcification of the phalanges and metacarpal or metatarsal bones are often found. Characteristic deformities produce great disability, and a careful examination of these will show that in most cases they are produced by fibrous retraction and consequent shortening of the muscles, and this is well demonstrated by the ready relief of the deformity procured by tenotomy. In some cases the deformity is found to be due also to arthritic changes, which clinically resemble rheumatoid arthritis, as Dejerine and Schwartz[2] have pointed out. It would be difficult to overestimate the importance of these nervous factors in the etiology of so-called "rheumatoid arthritis."

In a few of the very late cases I have been interested to find gangrenous patches on the sole of the foot or affecting the toes. In these patients the clinical picture has differed very markedly from that which has been described as characteristic of thermalgia and has strongly suggested arterial obstruction; but in none was there any evidence whatever of an arterial lesion at the site of the wound. These patients exhibiting gangrene gave the usual history of severe thermalgic pain for a period of several months, which had abated considerably of late, and at the time when the gangrene developed was only experienced at times and was more of a tingling or aching character.

Examination of the limbs revealed the following instructive points. There was always very marked contracture of some or all of the muscles supplied by the injured nerve, causing extreme limitation of passive movement. Palpation of these muscles showed that they were very hard and firm, as if composed of fibrous tissue. The skin was quite different from that usually met with in thermalgia. The hyperæmia, when any was present, was confined to a small area, such as the heel or inner border of the foot, whilst the rest of the foot was emaciated and the skin dry, thin, and pale. In some the pallor of the toes or fingers was so intense that these members had quite a waxy appearance. These are the cases in which apparently the most advanced atrophy of bone is to be found, and it is significant to notice that frequently warmth rather than cold tends to relieve any pain which is present.

The functional result in cases which have progressed to this stage is bad. Even if regeneration of the nerve is satisfactorily accomplished the limitation of movement due to muscular contracture is found to persist in spite of prolonged and careful splinting and all forms of nutritional treatment.

Case of Nerve Injury followed by Localised Endarteritis.

These cases suggested that some vascular alteration had supervened on the primary vaso-dilatation, but it was only possible to conjecture the probable explanation until I was sufficiently fortunate to procure a limb after amputation from a patient who exhibited some of the above symptoms.

Patient, aged 23. Gunshot wound of left thigh in July, 1916, bullet passing antero-posteriorly about two inches above and external to patella. Femur injured; no laceration of popliteal artery. He suffered from paralysis of the leg and a burning pain in the foot for several months after infliction of wound, but later the latter symptom slowly disappeared. History of operation upon nerve in March, 1917 (eight months after injury); no details could be procured.

Examination on day of operation (Feb. 5th, 1918). Absolute paralysis of all muscles distal to knee with considerable atrophy; palpation of muscular bellies showed them to be remarkably firm and hard. There was a very advanced contracture of both anterior tibial and all calf-group of muscles, permitting only the slightest passive movement at ankle-joint. Great toe hyperextended at metatarso-phalangeal joint and flexed acutely at interphalangeal joint, where no passive movement was possible. The other toes were similarly hyperextended at metatarso-phalangeal joints and flexed at both interphalangeal joints, but the deformity was not so pronounced as in the former.

The sensory loss was that of a complete sciatic lesion. Pressure over posterior tibial nerve (distal to wound) caused a little pain, which struck down towards heel. Skin of foot pale, dry, and inelastic, but not markedly thin. Knee ankylosed, but patient could demonstrate voluntary contraction of hamstring muscles.

It is important to state that Wassermann test was negative.

The leg was amputated on account of ankylosis of knee and the impossibility of any satisfactory operation on the nerve being performed owing to extensive scars and contractures.

Examination of the Amputated Leg.

No further mobility was possible at the various joints than before the operation. The limitation of movement at the ankle was found to be due to extensive fibrosis of ligaments and shortening of both the extensor and flexor muscles. On incising the thickened ligaments, early erosion of articular cartilage was discovered at the anterior extremity of the saddle-shaped facet on the astragalus.

Division of the tendon of the flexor longus hallucis at once permitted extension at the interphalangeal joint, and on division of the extensor longus hallucis and the innermost tendon of the extensor brevis digitorum complete correction of the deformity of the great toe was immediately possible. On opening the metatarso-phalangeal and interphalangeal joints no macroscopic evidence of arthritic trouble could be seen, so that this deformity may be assumed to have been due purely to muscular contracture. The deformities of the other toes were similarly due to retraction of muscles.

Beneath the scar in the popliteal space dense fibrous tissue was encountered, from which the internal popliteal nerve could be separated with some difficulty; and about the lower limit of the space the nerve was found to be fixed more severely in scar tissue and seen to swell out into a localised ovoid fibro-neuromatous mass. Distal to this point the posterior tibial nerve was throughout its course of greater diameter than usual. Further inspection of the fibro-neuromatous swelling showed that the nerve had probably been seriously lacerated, and from the shape and consistency of the mass it was likely that the external fibres had been divided originally, but intraneural sclerosis was considerable throughout. The external popliteal nerve was compressed for several inches by fibrotic tissue, having the consistency almost of cartilage, and appeared smaller than normal, but there was no obvious evidence of any severe laceration.

The popliteal artery and vein were patent, and in no way compressed by the scar tissue. The remains of the hamstring muscles possessed their normal red colour and plastic consistency, but all the other muscles of the leg and foot were atrophied and of a pale greyish colour, and on palpation were very much firmer than the hamstrings. It was impossible to define the muscles of the sole of the foot, their remains being represented apparently by fibrous tissue.

Captain A. E. Barclay kindly made an X ray examination of the foot, and reported some atrophy of the extremities of all the bones.

Examination of the Blood-vessels.

There was no thickening of the wall of the popliteal artery or vein, nor any diminution in their calibre.

Distinct thickening of the distal part of the posterior and anterior tibial arteries could be felt, but this was much more pronounced in the case of the dorsalis pedis and plantar arteries—whose lumen on section could easily be seen to be diminished.

Microscopic examination of distal part of posterior tibial artery showed slight uniform proliferation of the intima. (Fig 1.) The endothelial lining and the internal elastic lamina were intact throughout. The tunica media appeared normal except for an apparent relative thickening, but this is difficult to estimate and treacherously easy to misjudge. The muscle cells were in good condition and van Gieson's stain failed to reveal any abnormal amount of fibrous tissue.

The changes in the dorsalis pedis and plantar arteries were much more extensive. In each the lumen was obviously reduced in size and there was considerable proliferation of the intima, but it was not uniform, being much more pronounced at certain points. At no places did this thickening of the intima exhibit any degeneration. It was composed of a moderate number of connective tissue cells and loosely arranged white fibres. The endothelial lining was not intact, being

FIG. 1.—Transverse section of lower part of posterior tibial artery showing early change in tunica intima.

disintegrated in certain localised areas. The internal elastic lamina was broken up, especially opposite the points where intimal proliferation was most advanced. There was a definite layer of fibrosis between the intima and the media. The muscle cells of the latter were in nothing like so good a condition as in the posterior tibial artery, being more indistinct and showing in places undoubted degeneration. There was also definite fibrosis of the media, but the elastic tissue in this coat of the vessel was normal. (Figs. 2 to 4.)

FIG. 2.—Transverse section of dorsalis pedis artery to show diminution of calibre from proliferation of intima.

No section of any of the vessels showed round-celled infiltration or signs of inflammation.

Sections of the affected muscles demonstrated the most advanced atrophy and replacement of muscle cells by fibrous tissue and fat. The fibrous tissue appeared irregularly in patches and was much greater in amount than is normally seen supporting the muscle bundles. The lumen of many of the blood-vessels seemed to be considerably diminished, and in some instances practically occluded, but the details of this and the histological report on examination of the nerves, bones, joints, and skin must be reserved for a subsequent paper.

FIG. 3.—Transverse section of dorsalis pedis artery, stained with orcein, to show the internal elastic lamina breaking up.

Conclusions.

The evidence of endarteritis localised to the distal part of a limb, increasing in severity towards the periphery, in a young man of 23 who had fairly recently received a severe injury to the nerve-supply, is of considerable interest. In the absence of syphilitic or other infection, or indication of

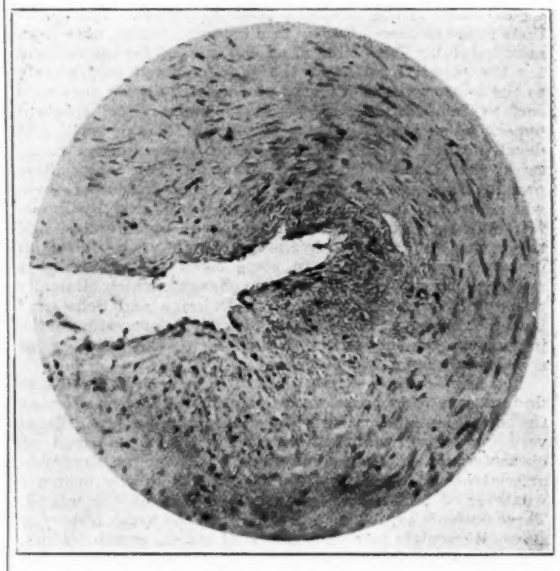


FIG. 4.—Transverse section of dorsalis pedis artery to show extensive thickening of intima and some disintegration of endothelial lining.

any local source of inflammatory implication, or direct involvement of blood-vessels, it seems reasonable to presume that the vascular changes are secondary to the peripheral nerve lesion.

The anatomical researches of Todd and his fellow-workers[3,4] have shown that the vessels of the limbs are

supplied directly from the various nerve-trunks, and that the vascular nerves do not pass distally as a periarterial plexus, which provides branches for the coats of the vessels. Their work has proved also that the nerve supplying any muscular or skin area also supplies the blood-vessels of that area.

Endarteritis has been found previously in peripheral neuritis, in a case of cervical rib by Todd,[1] and has been experimentally produced by operations upon peripheral nerves in rabbits and dogs by Fraenkel,[6] Byrvoets,[7] and others.

The appearance of gangrene and other features in the late stages of some of my patients who had received uncomplicated gunshot injuries of peripheral nerves strongly suggested arterial obstruction, although there was no indication that any main blood-vessel had been primarily or secondarily implicated by the injury or healing of the wound. The constant fibrous contracture of muscles in these cases showed a more serious condition than was to be expected from a simple nerve injury, and the histological examination points to this being due largely to diminished blood-supply in consequence of the endarteritis. It is important to emphasise the fact that this contracture is only found to occur in the muscles whose nerve-supply has been affected, as the following case clearly indicates.

Patient received gunshot wound of left forearm about level of lower limit of antecubital fossa. At first there was profound motor and sensory loss of median distribution. The flexor carpi radialis, flexor longus pollicis and thenar muscles soon began to recover, and eventually regained almost normal power. Later vaso-motor symptoms appeared affecting the index and middle fingers, and trophic sores developed on the same digits. The colour and condition of the skin of these two fingers were strikingly different from that seen in the case of the ring and little fingers. The index and middle finger were always much colder and the capillary circulation more sluggish than in the thumb or other fingers. The only muscle showing contracture in this patient was the flexor sublimis digitorum, which was paralysed. It is known that this muscle, except for its coronoid head, receives its nerves of supply distal to the point where the other muscles, which recovered, are supplied by the median.

With the additional clinical evidence derived from such cases as the above there seems little doubt that the muscular contracture is due to ischæmia, which is secondary to vascular changes caused by the nerve injury. It seems probable that the decalcification of bone may arise from the same cause. That it cannot be due simply to immobilisation is clear in many cases where the atrophy is limited to those bones supplied by the affected nerve—immobilisation cannot be held responsible when the phalanges and metacarpal bones of the ring and little finger are the only ones showing any change in an ulnar nerve lesion.

Consequently there is strong reason to conclude that irritative nerve lesions can produce changes in the walls of the arteries supplied by the affected nerves. These changes seriously reduce the calibre of the vessel and must inevitably diminish the blood-supply to the muscles, bones, joints, and skin. From the clinical and pathological evidence brought forward in this preliminary paper it seems probable that the so-called trophic disturbances are the result of vascular changes produced by an irritative nerve lesion. The contention held by Todd[8] that vascular changes precede trophic lesions is strongly supported by the clinical observation of these cases.

In view of the arterial disturbances here recorded there is no doubt that in the past the effect of peripheral nerve injuries upon the blood-vessels has been neglected, and it is equally clear that, if a better prognosis and more efficient treatment is to be attained, more attention must be directed to the secondary vascular changes in the future.

The practical point of greatest importance at the present moment is the early relief of the irritation. In this way the arterial changes which produce such serious complications may be prevented.

In conclusion, I desire to express my gratitude to Captain J. Morley for the opportunity of examining the patient and making a study of the leg after amputation.

References.—1. Stopford, J. S. B.: Thermalgia (Causalgia), THE LANCET, 1917, ii., 195. 2. Dejerine, J., and Schwartz, E.: Déformations Articulaires Analogues à celles du Rhumatisme Chronique, avec Troubles Trophiques, Cutanées et Hypéridrose relevant d'une Lésion Irritative du Nerf Médian, Soc. de Neurol., Feb. 4th, 1915. 3. Kramer, J. G., and Todd, T. W.: The Distribution of Nerves to the Arteries of the Arm, Anat. Record, May, 1914. 4. Potts, L. W.: The Distribution of Nerves to the Arteries of the Leg, Anatom. Anzeig., 1914. 5. Todd, T. W.: The Arterial Lesion in Cases of Cervical Rib, Journ. Anat. and Phys., 1913. 6. Fraenkel: Ueber Neurotische Angiosklerose, Wien. klin. Woch., 1896. 7. Byrvoets: Bijdrage tot de kennis aan het Spontaan Gangreen, Nederl. Tijdschr. v. Geneeskunde, 1894. 8. Todd, T. W.: Blood-vessel Changes Consequent on Nervous Lesions, Journ. Nerv. and Mental. Dis., 1913. Todd, T. W.: THE LANCET, 1912, ii., 392; 1913, i., 1371.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON PNEUMONIA AND TOXÆMIA.

BY T. CLIFFORD ALLBUTT, K.C.B., M.D., F.R.C.P.,
REGIUS PROFESSOR OF PHYSIC, CAMBRIDGE UNIVERSITY.

RECENTLY were published memoranda, by Dr. S. Riddiough and Captain H. V. Drew respectively,[1] illustrating the contrast between the local lesion of pneumonia and its toxæmia. Dr. Riddiough's notes were of a nurse under my care in the Addenbrooke's Hospital, in whom, in spite of extensive pneumonic consolidation, the general condition was but little disturbed. She would hardly admit the necessity of confinement to bed. No cardiac symptoms, no cerebral disturbances appeared at any time. Another case has recently occurred in this hospital illustrating the converse condition. The notes of the case, reported by Mr. Gittens, house physician, are as follows:—

Patient, aged 25, labourer, was admitted on Feb. 6th, 1918, with acute pneumonia. He lived in Cambridge; previous health good; outdoor worker; often got very wet. On Feb. 2nd a shivering fit, headache, and pain under left scapula; then a cough with very tenacious sputum. Well-nourished young man, with flush on both cheeks. Tongue furred, but moist. Pulse 98, full, but soft. Pupils dilated. On examination were found the usual signs of consolidation over lower half of left lung from angle of scapula downwards. Except some skodaic resonance above in front, no other physical signs of importance. Right lung normal. Albumin in urine. Abdomen distended and tympanitic. Spleen not felt. Temperature 104° F.

On the following day crisis took place suddenly and normally, with a heavy sweat. The patient had been delirious since admission, and was still agitated; did not know where he was, and incessantly tried to get out of bed. Last night was thus a bad one, in spite of ¼ gr. of morphia subcutaneously. A day later the pulse became very irregular and weak, so that coffee and strychnia, 1/22 gr. (subcutaneously), were administered. This condition persisted for about four hours and, taken with the delirium, seemed very perilous. Meanwhile redux crepitations were following normally in the affected part of lung, and no further pulmonary symptoms appeared. Abdomen still tympanitic. The temperatures after the crisis were rather subnormal. From the 9th to 11th patient remained in this condition, stupor alternating with active delirium. Once or twice urine was passed into bed. On the 11th he became a little more rational, and had glimpses of where he was; he was drowsy rather than delirious, and took food better. Pulse feeble and second sound reduplicated at apex. From this date patient made a good recovery; he rose from bed for the first time on March 3rd.

The diagnosis was more than once revised; an underlying typhoid was considered, in which subnormal temperatures are not unknown; but by agglutination tests neither A nor B was indicated. Against pneumococcic meningitis was the absence of pain in the head, vomiting, convulsion, and so on, and ultimately the rapid and complete recovery. I dwelt on this case before the students as another instance of lack of proportion between local lesion and toxæmia; the local lesion was never considerable and did well, while, notwithstanding the delirium, the tympanites and the poisoning of the myocardium were alarming and persistent for some days after the crisis. I suggested that the different strains of pneumococcus might prove to have each its own clinical characters. These cases warn us not to take too mechanical a view of acute pneumonia. Even venesection may be helpful rather by drawing off toxin than by relieving venous pressure.

VINUM COLCHICI IN TRENCH FEVER.

BY W. GORDON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL.

IN their valuable report to the Medical Research Committee on Trench Fever[2] Captain C. E. Sundell and Captain A. T. Nankivell comment on the unsatisfactoriness of present methods of treatment. They make no mention of colchicum, and I am unaware of any allusion to colchicum in the literature on the subject. Yet vinum colchici seems to me to have distinct value in dealing with the troublesome shin pains of which so many cases come before us—sufficient value at all events to justify attention being drawn to it. The following cases illustrate what I mean.

[1] Brit. Med. Jour., 1917, i., 732; 1917, i., 581.
[2] THE LANCET, March 16th, 1918, p. 399.

Private A. went sick on Nov. 1st, 1917, and came under observation on Nov. 11th. The shin pains were very obstinate and severe; aspirin gr. x. ter die, ext. cannabis indica gr. 1/5 ter die (sometimes useful), radiant light and heat, magnes. sulphate compresses were all of little avail and I had to give morphia every night. The following mixture, however, caused immediate and marked improvement:—

R	Sod. iodid. ... gr. iii.	Spt. am. arom. ...	m xv.
	Sod. salicyl. ... gr. xv.	Aq. chloroformi...	ad ʒi. ter die.
	Vin. colchici ... m vii.		

Subsequent experience pointed to the colchicum as the chief factor in producing this effect.

Private B. had gone sick on Oct. 17th, 1917, and came under me on Nov. 11th. The same list of remedies as in the preceding case having done very little good, on Dec. 4th I added to a salicylate mixture on which he was—

R Vin. colchici ... ... m xv. ter die.

and in two or three days the pain had practically disappeared, leaving only slight stiffness.

Sergeant D. was at once much benefited by colchicum.

Private P. admitted on Dec. 30th with considerable pain. On Jan. 3rd was already decidedly better on

R Sod. salicyl. ... ... gr. x.
Vin. colchici ... ... m xv. ter die.

Private W. went sick Dec. 21st. Admitted Dec. 30th. On Jan. 3rd already much better on the same mixture.

Private M. went sick Dec. 4th. Admitted Dec. 12th. By Dec. 20th was free from pain.

Gunner H. went sick Nov. 24th. Admitted Dec. 12th. The pain remained obstinate until this mixture was given on Dec. 28th, when he was much relieved.

Rifleman E. went sick Dec. 10th. Admitted Dec. 20th. At once put on the mixture, and was very much better on Jan. 3rd.

Private W. went sick early in November. Admitted Jan. 9th, 1918, with bad pain. The above mixture rapidly relieved him, and on Jan. 14th he was free from pain for the first time.

These cases are, of course, very few, and another short series might not show equally good results. Indeed, I have had some cases since, where colchicum failed. But, in view of the difficulty of alleviating these troublesome pains, I shall doubtless be held excused for publishing such brief notes. The mixture I have of late been using as a routine has been:—

R	Sod. salicyl. ... ... gr. xv.	Spt. am. arom. ...	m xv.
	Vin. colchici ... m xv.	Aq. chloroformi ...	ʒi.

Three or four times daily after food.

Exeter.

THE X RAY APPEARANCES OF TRICHINIASIS.

BY CLAUDE GOULDESBROUGH, M.A., M.B., B.Ch. OXON., M.R.C.S., L.R.C.P. LOND.,
ASSISTANT SUPERINTENDENT AND MILITARY RADIOGRAPHER, ST. THOMAS'S HOSPITAL; RADIOGRAPHER TO THE EMPIRE HOSPITAL AND THE RUSSIAN HOSPITAL FOR OFFICERS.

THE disease caused by the *Trichina spiralis* is not extremely common, at least in this country, but from time to time cases do occur, and then they are possibly mistaken at first for other conditions such as acute rheumatism or commencing typhoid fever. As a rule, it is only during the later stages of the disease, when the cysts have become calcified, that any abnormality can be detected on the plate. This generally is supposed to take about six months, but on this occasion, as will be described, complete calcification had occurred within three months from the commencement of the symptoms.

During the early period the diagnosis can be made both on clinical grounds and also from the accompanying eosinophilia when present. However, assuming that sufficient time has been allowed to elapse, a positive diagnosis can be made at once by means of an X ray examination. The excuse, therefore, for publishing this case, together with the accompanying photograph, is that the X ray appearances of this disease may not be quite familiar to all.

History of the Case.

The patient was admitted to St. Thomas's Hospital in May last under Mr. H. B. Robinson complaining of sickness, faintness, and loss of weight during the previous three months. He had had, so he stated, one attack of loss of consciousness with convulsions, and confessed to having acquired syphilis 20 years ago. He had seen service in the army both in India during 1895, where he contracted malaria, and also during the Boer War. In 1905 he had had a small growth removed from one cheek.

On examination small nodules were felt in the calves of both legs and also in the upper limbs. The nodules were small and hard, and moved with the muscles. Heart, lungs, and pulse were normal. No temperature.

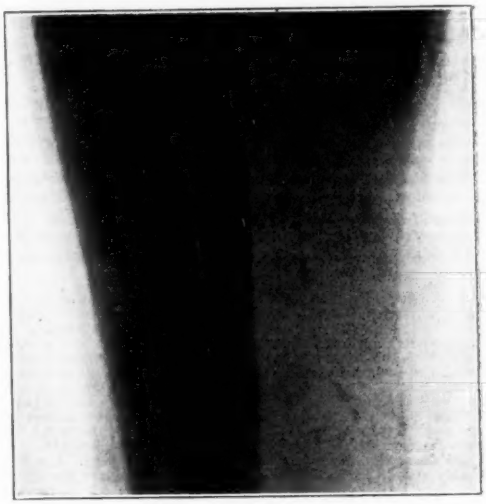
The blood examination gave the following result:—

	Per cent.		Per cent.
Leucocytes	7·4	Large lymphocytes... ...	16·5
Polymorphonuclear neutrophiles	55	Large hyaline	3·6
Eosinophiles	1	Coarsely granular basophiles	0·5
Small lymphocytes... ...	16		

He stated that he occasionally ate sausages, but never pork.

X Ray Appearance.

The X ray appearance is quite typical. Numerous small, dense, sharply defined areas are seen, varying in shape from that of an ovoid to that of a disc, according as to whether or no the cyst is viewed full face or in profile. The shadows vary in density from that of compact bone to that cast by cancellous tissue and are wholly in the soft parts, being unconnected with the bone. In a few instances a transparent rounded area could be seen in the centre of the shadow, but in most of the cysts the density was uniform throughout. It is interesting to note not only the short history of the case and the absence of eosinophilia, but also that the provisional diagnosis of trichiniasis was completely confirmed by the use of X rays.



Radiogram of calf of leg showing calcified trichinæ.

Welbeck-street, W.

A NOTE ON THE OCCURRENCE OF *SPIROCHÆTA ICTEROHÆMORRHAGIÆ* IN THE COMMON RAT IN ENGLAND.

BY ALFRED C. COLES, M.D., D.Sc., F.R.S. EDIN., M.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL NATIONAL SANATORIUM, BOURNEMOUTH.

THE Japanese observers Ido, Hoki, Ito, and Wani[1,2] state that the infection in so-called Weil's disease is transmitted probably from rats to man by means of the urine of rats, directly or indirectly. They have found the pathogenic spirochætes by inoculating guinea-pigs as well as by direct examination in the kidneys of 40·2 per cent. of 149 *Mus decumanus* and 0·8 per cent. of 24 *Mus alexandrinus* taken from the infected areas. Stokes and his co-workers,[3] as well as Martin and Pettit,[4] have also successfully inoculated guinea-pigs with the emulsion made from the kidney of rats caught in the trenches in the war area. Noguchi[5] in America has had similar results from rats caught in the vicinity of New York City. In October, 1916 thanks to the kindness of Captain Adrian Stokes, R.A.M.C., I received many films of blood and liver of guinea-pigs inoculated with the blood from cases of infectious jaundice. Dr. G. T. Western has also quite recently sent me a series of blood and liver films from inoculated guinea-pigs.

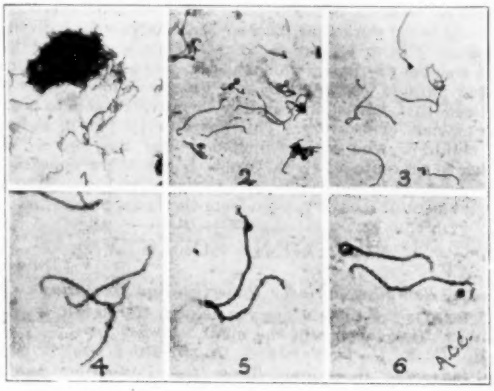
On Nov. 1st a half-grown common rat (*Mus decumanus*) just killed and much mauled, was brought to me from the neighbourhood.

I removed both kidneys and made a section through about the middle of the cortical layer of each, and expressed the tissue juice, which I mixed with a few drops of distilled water. A drop of this thin emulsion was placed on a slide and covered with a cover-glass, whilst six thin smears were made from the rest. When dry these were stained for two or three hours with Giemsa.

When I examined the fresh cover-glass preparations by means of dark-ground illumination as just described I saw,

after some hunting, a few thread-like bodies. These, at the time I examined the slide, showed hardly any movement from place to place; but what was quite new to me was the peculiar movement of each of the ends of the thread, whilst the middle or body portion seemed quite still. Many of the spirochætes showed little or no internal structure, but granules could be seen in some, whilst in a few the organisms looked like a row of beads slowly waving about. When the Giemsa-stained preparations were examined it was abundantly evident that the spirochætes were morphologically identical with the *S. icterohæmorrhagiæ*. In their size, shape, and staining reaction, and in especially the recurved fishhook-like ends, they exactly resembled the spirochætes seen in the liver of inoculated guinea-pigs.

I have since examined in all 100 rats killed in the town or surrounding country, and have found that 9 per cent. harbour these spirochætes. The distribution of the infected rats varies considerably From the town 38 rats were examined with 2 positive, or 5·26 per cent.; from the country 62 rats with 7 infected, or 9·67 per cent. From one area there were 17 rats with 6 positive, or 35·3 per cent.; from another only 1 positive out of 34, whilst from a third district none of the 11 rats was infected. In the 99th rat (see illustration) large masses of spirochætes were found in the kidney emulsion Noguchi has recently shown that the *S. icterohæmorrhagiæ* differs from all known spirochætes in possessing a large number of minute spirals, 10 to 12 to each 5μ, which are difficult to see, which have not been previously described, and of which he says "so far no satisfactory microphotograph has been reproduced." I have seen these spirals in some of the spirochætes of each of the positive rats and



Film of emulsion of kidney of Rat 99. Silver impregnation. 1. Large mass of spirochætes. × 250. 2 and 3. Spirochætes. × 700. The fine spirals can be seen with lens. 4 to 6. Spirochætes. × 1660. Fine spirals clearly seen.

have succeeded in photographing them. In my opinion they are diagnostic of the newly created genus the Leptospira of Noguchi.

References.—1. Ido, Hoki, Ito, and Wani: The Prophylaxis of Weil's Disease (spirochætosis icterohæmorrhagica). Jour. of Exper. Medicine, 1916, xxiv., 482. 2. Idem: The Rat as a Carrier of *Spirochæta icterohæmorrhagiæ*, the Causative Agent of Weil's Disease (Spirochætosis icterohæmorrhagica). Ibid., 1917 (No. 3. Sept. 1st), xxvi., 341. 3. Stokes, Ryle, and Tytler: Weil's Disease (Spirochætosis icterohæmorrhagica) in the British Army in Flanders. THE LANCET, 1917, i., 142. 4. Martin et Pettit: Presence de *Sp. icterohæmorrhagiæ* chez le Surmulot de la Zone des Armées, C. R. Soc. Biol., 1917. No. 1., Jan. 6th, 80, 10–11. 5. Noguchi, H.: *Spirochæta Icterohæmorrhagiæ* in American Wild Rats and its Relation to the Japanese and European Strains. Jour. of Exper. Med., 1917. May 1st, No. 5, xxv., 757.

Sir William Whitla has been invited to become candidate for the representation of Queen's University, Belfast.

THE LATE DR. JOHN AIKMAN OF GUERNSEY.—John Aikman, who graduated at Glasgow in 1871, settled in Guernsey two years later and remained there all his life. He was medical officer to the Victoria Cottage Hospital, consulting physician, with the rank of Surgeon-Colonel, on the Governor's staff, and principal medical officer to the Guernsey Militia. The claims of a large general practice absorbed the larger portion of his time, but he presided for a period over the Guernsey Natural Science and Research Society, and contributed to our columns in 1901 a thoughtful note on the respiratory movements in the præcordial area.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF ELECTRO-THERAPEUTICS.

Discussion on the Electrical Treatment of Cases of Injury to Peripheral Nerves.

AT a meeting of this section held on March 15th, at which Dr. HARRISON ORTON presided, the discussion was resumed on Lieutenant Noel Burke's paper on the Electrical Treatment of Cases of Injury to Peripheral Nerves.[1]

Dr. STANLEY BARNES, speaking as a neurologist with a large military experience in the Birmingham district, said he had found the diagnosis of these cases had been very bad. He was not referring to the early diagnosis, but he had seen many cases in which a nerve trunk had been badly enough damaged to cause complete paralysis, yet no diagnosis had been made for months afterwards. That remark applied particularly to median nerve cases. Musculo-spiral cases were fairly obvious, because of the sequential hand wasting. Yet the median was the most important nerve of the arm, seeing that nearly the whole nervous supply of the arm was built up round it. It was most important to diagnose correctly what nerve was, and what nerve was not, damaged in a given case. Functional hysterical paralyses were often missed, yet they were easily recognised if care were taken; the only difficult cases were those of mixed functional and organic nature. He agreed with Lieutenant Burke that the antagonistic muscles were liable to shorten if left in a faulty position, and to weaken if they were not exercised. So long as the integrity of uninnervated muscle could be maintained, so long was cure possible if the nerve elements were capable of restoration. Cases were on record in which 10 years had elapsed and yet successful nerve suture had occurred. He fully agreed that massage was one of the most important treatments, as one of the main elements of the treatment of the muscle was the maintenance of its physiological activity within reason, and to maintain the metabolism of the tissue locally; that could be done by any process which would maintain the circulation through the part at a high rate. Treatment of these muscles for periods of ten minutes to an hour daily should not be the only treatment, for in the intermediate time it was essential that the limb be kept warm. It was in the absence of the latter that present treatment was to a large extent failing. While patients were walking about, exposed to cold winds, no regeneration was taking place. He did not agree that the passage of the galvanic current had a great effect in promoting circulation and helping chemical interchange. It had some effect, but not, in his view, at all a great one. Dr. Barnes then proceeded to discuss the periods required for the recovery of different nerves after suture, and ridiculed a fairly prevalent notion that recovery would ensue in a few days or a week or two. In the early stages of cases of nerve injury there should not be severe movements of any kind, but after the wound had healed and the nerve had been restored as far as necessary by the surgeon there was need of activity, not only local, but general. This had the advantage of not only increasing the patient's general tone and also his circulation, but of occupying his mind on other matters than his injury.

Major RAWLINGS spoke of his experience of military cases in India. Compared with cases from France, the nerve injuries from the Mesopotamian front were proportionately easy in their surgical treatment. The wounds were infinitely cleaner owing to the sand of the desert and the sun, even though a month had often elapsed between the receipt of the wound and his seeing the cases. Colonel Beatty, an electro-therapeutist, afforded the surgeons valuable advice as to whether a case should or should not be operated upon. The average time at which nerve suture was done was six weeks after the receipt of the injury. In only one or two isolated cases could any suppuration be attributed to the exploration of the nerve, even though, owing to the heat, perspiration poured off the face of the operator during the procedure and the atmospheric conditions prevented the toleration of a face-mask. He did his utmost to get nerve suture

[1] THE LANCET, March 2nd, 1918 (p. 388).

cases sent home to England, where, in a large hospital, there was a chance of electro-therapeutical treatment; in a large number of cases his efforts failed, largely because the authorities seemed to consider that recovery would ensue in a few weeks. It was very important to the surgeon, not only that the electro-therapeutist should state exactly what he found, but that he should tell the surgeon what, on the strength of his examination and knowledge, he advised. He insisted that in the case of nerves end-to-end union was the only practical result to strive for; nerve graftings and trellis-work sutures he regarded as of little use.

Major JOCELYN SWAN said that at Woolwich the surgeon had the advantage of consultation with the electro-therapeutist and the neurologist. There he had operated upon some 300 nerve cases, most of which he had been able to follow up. He looked upon the operation itself as only an event in the treatment; the pre-operative and post-operative procedures were of more importance. His chief general criticism was that surgeons were apt to, as it were, jump at a case and operate upon it before taking care to get the limb into such a condition that it would give the operation a chance. And there should be a constant application of warmth, and the carrying out of massage and electricity to keep up the nutrition to the highest possible point. He emphasised especially warmth and massage. The practice of keeping these limbs immobilised was a matter which had to be seriously contended with. He entered in detail as to the correct postures and degree of movement in different classes of injury. The post-operative treatment should be not only local, but directed to the whole body. The rule that if a man was not fit for active service in six months he should be rejected he regarded as a pernicious one, especially as a man so discharged was found to be wandering round the country trying to find a civil hospital willing to continue his treatment. He quite agreed as to the difficulties presented by some cases in which an organic case had a functional element engrafted on to it. His views on the prognosis of nerve cases after suture were now more hopeful than they were before his experience had become so much greater. He believed muscular reactions became restored in 30 per cent. of the cases. The most favourable type of nerve injury was that of the musculo-spiral. He would not operate upon a nerve under three months from the receipt of the wound.

Captain R. H. COOPER spoke of his experience of over 1000 cases, and discussed the physiology and pathology of nerve regeneration. Only those measures caused benefit which produced a contraction in the muscle fibre. To claim that massage acted mechanically by squeezing out certain substances into the lymph-channel was unscientific. But it probably caused a feeble contraction, and in so far produced benefit. The same was true of electrical stimulation. He had been pleased with the results of baths, especially the whirlpool bath, because with the use of ordinary hot water the patient could not be trusted to maintain movement. Patients also needed watching in the workshops, or they would put the tool into the sound hand at every opportunity.

Dr. GEORGE BATTEN asked that some means should be taken to disseminate generally to the profession Lieutenant Burke's paper and the report of the discussion on it, as much benefit must accrue from such a course.

Dr. HERNAMAN-JOHNSON said failure of the surgeon's part was often due to the re-formation of fibrous tissue round the nerve, and anything which could be done to check that was an advantage in the ultimate result.

Lieutenant BURKE replied at length.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Coagulation of the Blood in Purpura and Hæmophilia.

A MEETING of this section was held on March 22nd, Dr. ROBERT HUTCHISON being in the chair.

Major W. PALMER LUCAS, professor of pediatrics at the University of California Hospital, spoke of the results of clinical experiments he had carried out at this hospital on Coagulation of the Blood in Purpura and Hæmophilia, according to the methods described by Professor W. H. Howell, professor of physiology at the Johns Hopkins Hospital. He said that there were three factors essential to clotting: (1) Prothrombin, (2) thrombin elements, and (3) the substance known as antithrombin, which held the blood in solution. In cases where the coagulability of the blood was decreased there was either an increase of antithrombin (as in cases of purpura due to streptococcal infection and in some cases of jaundice), or a decrease of prothrombin. This occurred in most cases of purpura and in hæmophilia. In Henoch's purpura, for instance, prothrombin was decreased during an attack; the decrease was very marked, and the amount of prothrombin present was always below normal. In blood transfusion for purpura he preferred whole blood to serum, as in some serums there was an excess of antithrombin. Good results had been obtained from blood transfusion in purpura, but in the case of hæmophilia he had not been able to raise the prothrombin factor enough to obtain success. He usually depended upon rest and local treatment. Hæmophiliacs usually bled up to a certain point and then stopped. If the blood were examined at once (and it was very difficult to get a sample at this time) the factors were practically in the normal condition. The whole factor in coagulation was the balance between pro- and anti-thrombin.

Replying to questions, Major LUCAS said it was not advisable to employ the method in private homes. A hospital laboratory was required. Kephalin was not by any means a panacea. He had used it on hæmophiliacs, but it had not had much effect. With regard to hæmorrhagic disease of the newly born, he said that there were two types—(1) in which the antithrombin factor was increased; the septic cases belonged to this type, and the mortality was very high on this account; (2) in which there was diminution in the amount of prothrombin. He had had a case which recovered after whole-blood transfusion. So far he had done no work on syphilitic cases. The reason for the want of balance between pro- and anti-thrombin was at present being worked at, but, so far, analyses had given no results. The investigation was a difficult one on account of the number of tissues which had to be analysed. In rheumatic purpura prothrombin was usually deficient. He had noticed that hæmophilic patients were often able to predict the moment of recovery. This was especially so in the case of children, who often announced that they were "now going to get quite all right," even though there appeared to be no change in the condition. It was often possible to tell the moment of recovery, even from the facial expression.

RÖNTGEN SOCIETY.

A Biological Basis for Protection Against X Rays.

A MEETING of this society was held on March 5th, Captain G. W. C. KAYE being in the chair.

Mr. C. R. C. LYSTER and Dr. S. RUSS read a paper entitled "A Biological Basis for Protection Against X Rays." In this contribution the study of the protection of X ray operators was approached from a somewhat different point of view from that usually adopted. In previous investigations the materials have generally been tested to ascertain what fraction of the incident rays are transmitted; in this case an attempt was made to measure the total quantity of radiation received by the operator during, say, a day's work under normal conditions. For this purpose the operator carries a photographic plate upon his person and at the end of the period under consideration the plate is developed. The density of the resulting image is compared with that of another plate termed the "biological basis plate," which has been exposed under standard conditions of radiation. A preliminary investigation enables the harmful effects of the standard source of radiation to be determined, and thus gives a meaning to the indication of the biological basis plate. Radium forms a useful source of radiation for practical purposes after the initial tests have been made and it overcomes difficulties in the employment of an X ray tube as a constant source. The effect of hard and soft radiation (12-inch spark to 2-inch) on the photographic plate was fully investigated, and it was concluded that for the same ionising effect the hard and soft rays produced about the same photographic effect; the effect, however, varies with different makes of plates, and in consequence all comparisons must in practice be made with the same variety.

Mr. H. C. HEAD gave a detailed description, illustrated by numerous photographs, of a Motor X Ray Unit recently designed and constructed for use in Mesopotamia.

The Röntgen Society has recently founded an annual lecture in memory of its first President, the late Professor

Silvanus P. Thompson. The first Silvanus Thompson Memorial Lecture will be delivered by Professor Sir Ernest Rutherford, F.R.S., at the next meeting of the society, to be held on Tuesday, April 9th, at 8 P.M., in the lecture-room at Burlington House. Applications for cards of admission should be made to the honorary secretary of the society, Dr. S. Russ, Middlesex Hospital, London, W.1.

SOCIÉTÉ DE BIOLOGIE, PARIS.

THE following is a summary of the papers read at a meeting of this society held on March 9th:—

F. ARLOING.—Hæmatological changes after Splenectomy.

La splénectomie pratiquée chez un soldat à la suite d'une déchirure de la rate par éclat de grenade a été bien supportée par l'organisme de façon immédiate et n'a pas paru exercer dans les 3 premiers mois qui la suivirent une influence importante sur les grandes fonctions du sujet splénectomisé. Au point de vue hématologique, la splénectomie n'entraîne pas de modifications à la teneur du sang en hématies dont la valeur globulaire est conservée. Par contre, elle paraît provoquer une mononucléose avec myélocytose et éosinophilie sans hyperleucocytose véritable. Les altérations de la figure sanguine neutrophile d'Arneth dépendent plutôt de l'infection post-traumatique que de la splénectomie.

L. CORNIL.—The Oculo-Cardiac Dilatation Reflex.

A. CLERC, REGNARD, et BOLÈNE.—Hereditary Polydactyly.

R. J. WEISSENBACH.—Rapid Demonstration of Streptococci in Gunshot Wounds.

W. préconise l'ensemencement large de l'exsudat dans l'eau peptonée glycosée (2 per mille) additionnée de son volume d'albumine d'œuf alcaline, ce milieu donnant, d'après le résultat de nombreux essais comparatifs, dans les délais les plus courts et le plus constamment, quelque soit la nature des germes associés au streptocoque, la culture la plus abondante de ce germe, avec sa morphologie la plus caractéristique.

HOLLANDE.—Amyl Alcohol in Histological Technique.

L'alcool amylique, ne s'hydratant pas comme l'alcool éthylique absolu au contact de l'air, peut remplacer très avantageusement ce dernier dans le montage des coupes colorées au baume du Canada-xylol.

R. LERICHE et A. POLICARD.—The Rôle Played by Foreign Bodies in Production of Pseudarthroses.

Dans 11 cas de pseudarthroses suite de fracture de guerre, les auteurs ont trouvé 9 fois, dans le tissu fibreux interfragmentaire des corps étrangers microscopiques (débris de vêtements surtout). Ces débris parasites invisibles à l'œil nu ne sont parfaitement tolérés dans les tissus; ce n'est pas par infection qu'ils agissent généralement. Mais autour d'eux il se forme des nodules fibreux qui constituent des obstacles insurmontables pour l'os jeune en croissance. C'est ainsi par une action d'ordre morphogénétique, que ces corps étrangers microscopiques constituent un facteur puissant de genèse de pseudarthrose. Dans les foyers de fracture un nettoyage minutieux s'impose donc.

R. BÉNARD.—Presence of Complement in the Circulating Blood.

Le complément se rencontre dans le sang aussitôt sa sortie du vaisseau. Il suffit pour s'en assurer de recueillir le sang dans du liquide anti-coagulant isotonique. Après centrifugation, le plasma oxalaté se comporte comme du sérum frais de cobaye en présence d'une hémolysine inactivée et de globules appropriés.

LAPIQUE et LIACRE.—War Bread.

Dans le pain contenant une certaine proportion de son remoulu par les procédés ordinaires de la meunerie, la plupart des cellules à aleurone sont digérées; les cellules paraissent intactes, dans la farine, mais, en réalité, on peut constater de légères fissures dans leur paroi; le travail de la panification amène ensuite un éclatement total et le contenu des cellules devient ainsi accessible aux actions digestives.

NETTER et BLAIZOT.—Experimental Identification of Typhus Infection.

ED. RETTERER.—Evolution of the Intratendinous Sesamoid Bones.

New Inventions.

A METHOD OF TRAPPING FLY LARVÆ IN MANURE HEAPS.

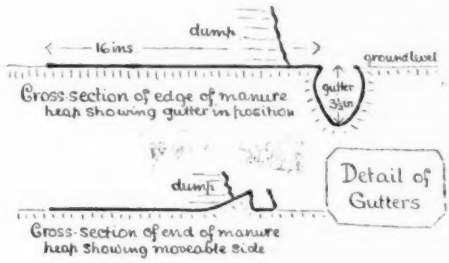
THE method has been in use for some time at Potchefstroom Camp, and has dealt with the manure of over a thousand horses during summer and winter with uniform success. The method is equally suitable for comparatively small quantities. The larva has (1) the feeding stage, and (2) the migratory stage, during which it will travel considerable distances to find a suitable place in which to pupate. The larva cannot climb a smooth surface of the shape shown in the cross section of gutter (see figure); it lives only in the out-side few inches of the manure heap, and is quickly killed by the heat inside (130°–160° F.).

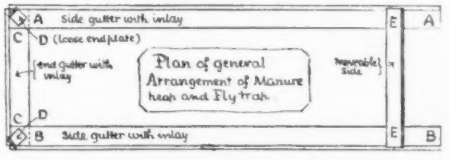
All migrating larvæ fall into the gutter, from which they are cleared daily and destroyed by burying in the manure dump, about a foot deep. The gutter has an inlay, which is carried under the outer edge of the dump about 16 inches, to prevent the larvæ from burrowing into the ground. A small proportion of the larvæ will be found to pupate in the loose outside surface of the dump; the outer few inches in which pupæ are seen is lightly raked off and burned in any improvised incinerator, or, if too wet, can be buried in the dump.

Details of construction can be varied and developed to any extent. The gutter with inlay is made in lengths of 15 feet of sheet metal, each length of gutter being closed with stop ends. In the inlay the ends are bent to form a close joint. The writer, unable to obtain sheet metal, had the guttering constructed entirely out of paraffin tins by two handy men of the Sanitation Sections. The tins were opened out into sheets 35 by 14 inches, and double-seamed together into large sheets 26 inches by 15 feet. The seams are made to lie on the under side, so as to obtain a closer joint. The under side of the guttering is tarred. For a permanent installation the gutter and inlay of the three fixed sides might be of cement concrete if the gutter has a smooth surface.

The site of the dump should be roughly rectangular, its extent depending on the quantity of manure. If provision has to be made to accumulate the manure for an indefinite period sufficient guttering must be provided for five weeks' accumulation. For 1000 horses a width of 20 feet was suitable.

On a suitable level area gutters with inlay are laid down along both sides (A A, B B), and also at C C, where dumping will begin, a little earth being removed to allow these gutters





to "bed" firmly; the ends of each length and its inlay are placed in close juxtaposition with the next. Larvæ are prevented from escaping at the corners (A C and C B) by two small plates (D D). At the other end (E E) is a length of gutter and inlay shaped to permit it being moved; this gutter is not sunk in the ground nor are its ends closed, the larvæ from it falling into the side gutters.

Commencing at the end C C, the first day's manure is tipped over the space bounded by the two lateral gutters, and as close to them as possible. The second day's manure is stacked above the first, and the third day's above the second, to a height of about 10 ft. About the end of the fifth week the manure will have reached the limit of the guttering. The manure dumped during the first week will now be "dead" and free of larvæ; the first lengths of gutter may be lifted and re-laid at the opposite end and dumping continued. The "dead" manure dump can be planted with suitable seed or may be carted away.

Close attention to minutiæ is necessary. The use of this method of treating manure is economical. The adult flies which are attracted to the dump are destroyed by the "arsenite of soda bait" method; leafy branches are hung from a wire stretched over the top of the dump and are sprayed with the arsenite bait, as recommended by Lieutenant-Colonel Chas. Porter, S.A.M.C., to whom I am indebted for advice and assistance and the accompanying sketch.

E. BABER, Lieutenant, S.A.M.C.,
Sanitation Officer, Potchefstroom Cantonments, Transvaal.

Reviews and Notices of Books.

Injuries of the Face and Jaw, and their Repair, and the Treatment of Fractured Jaws. By P. MARTINIER and G. LEMERLE, Professors in the Dental School at Paris. Translated by H. LAWSON WHALE, Captain, R.A.M.C. London: Baillière, Tindall, and Cox. Pp. 345–xx. Price 5*s.* net.

THIS little book deals with the method of construction of prosthetic appliances necessary in the restoration of facial injuries, and the wealth of mechanical detail given with regard to these appliances is amazing, being especially noticeable in the chapter devoted to laryngeal prosthesis. The work should be read by all those who have to deal with facial injuries the result of gunshot wounds, although published as it was in the early days of the war, it deals principally with the treatment of injuries due to pathological causes, and little mention is made of plastic surgery or bone-graft operations, which are of more recent employment. A valuable essay on this subject is contributed to THE LANCET this week by Captain Harry Platt, Mr. G. G. Campion, and Mr. Barron Rodway, founded on their experience of cases received at one of the large general hospitals. To take an example: in cases of extensive loss of mandible or maxilla, the authors advocate replacement of the loss by immediate prosthetic appliance; but this method has already proved impracticable in the treatment of gunshot wounds, owing to the degree of sepsis present.

We are in complete agreement with the authors on the uselessness of paraffin wax for the restoration of contour in facial injuries, holding, with them, that its employment is doomed to failure. The method of rhinoplasty over a metal apparatus, as described in the volume, has, in the majority of cases, proved unsuccessful in this country, better results having been obtain by the use of cartilage supports, and we agree with the translator's remark that the authors' comments on total rhinoplasty seem unduly harsh. In dealing with fractures of the lower jaw, great stress is laid on the necessity for the preservation of dental adjustment in opposition to the school which favours approximation of fragments to obtain bony union even at the expense of articulation. The latter view is more general in this country, and we suspect that the authors have been led to form their opinion by the cases met with in civilian practice, where loss of substance apart from surgical interference is rarely met with, and consequently little or no opportunity offers for obtaining bony union. The authors state (p. 282) that a tooth, even if tottering, should never be extracted when it is in relation to the fracture track. As noted by the translator, this point has been much in debate, and we believe that with more extensive experience of gunshot wounds, the authors may come to see that more bone may be lost through septic absorption owing to the retention of teeth than by their extraction in an early stage.

We have purposely laid stress on the differences between French and English practice as illustrated in this book. Its outstanding merit lies in the wonderful ingenuity of the mechanical appliances described, and on this account alone it should be in the hands of all who are interested in this branch of surgery.

The Jewish Child, its History, Folklore, Biology, and Sociology. By W. M. FELDMAN, M.B., B.S.Lond. London: Baillière, Tindall, and Cox. 1917. Pp. 418.

THE history of the Jewish people, as traced through 2000 years of persecution, affords an attractive theme to the student of history and of biology. Active, virile, and numerous as ever, the Jewish race flourishes to-day in lands where its contemporaries, the Phœnicians, Egyptians, Babylonians, and Assyrians, have long ceased to exist. Such a keen observer of men and manners as Mr. Gerard, sometime United States ambassador in Berlin, attributes the development of art and science in Prussia in large part to the Jewish element in modern Prussia, culture of to-day being therefore not a Teutonic but a Semitic achievement.

Dr. Feldman's survey of the several phases and aspects of Jewish child life is a serious contribution to one aspect of this race problem. It may be that he tries to cover too large a field, and we think that the book would certainly gain if the relative values of such widely different sources as the Talmud, written in the early Christian Period, and the Shulchan Aruch, compiled only a few centuries ago, were made clearer. At different periods interpretations on the same point differed widely, and the reader should be forewarned that some of the laws and recommendations quoted date from a period of crass ignorance, when the Jewish community was huddled in Ghettoes, hemmed in by prejudice and religious superstition. But with this drawback the compilation remains of surpassing interest to students of medical and sociological history, as also to the devotee of eugenic research. The chapters dealing with the growing child, the health of the mothers, and general sanitary laws will be of practical use to the welfare worker in the East-End of London where the Jewish population—Polish, Russian, and Rumanian—in following the teachings of their prophets and teachers have succeeded in resisting better than others the deteriorating influences of city life.

Otites et Surdités de Guerre. (Collection Horizon.) Par les Dr. BOURGEOIS, Oto-rhino-laryngologiste des Hôpitaux de Paris; et Dr. SOURDILLE, Ancien Interne des Hôpitaux de Paris. Paris: Masson et Cie. 1917. Price 4 fr.

THIS little book forms an excellent member of an excellent series. It is designed as a handbook for the medical officer without special experience, and so far as print can replace first-hand knowledge the intention is thoroughly well carried out. The surgical portions are clearly written and the diagrams are comprehensible. The section on simulated deafness is particularly good and full. The subject is a difficult one, and has been in the past of relatively small importance in Great Britain, but is likely to be prominent in all European countries for many years to come. We cordially recommend the book to all to whom the language is not an obstacle.

LIBRARY TABLE.

War Drawings. By MUIRHEAD BONE. Edition de Luxe. From the Collection presented to the British Museum by His Majesty's Government. Parts IV. and V. Price 10*s.* 6*d.* net. Published by Authority of the War Office by *Country Life*, Limited, 20, Tavistock-street, Covent Garden, London, W.C., and George Newnes, Limited, Southampton-street, London, W.C. 1918.—The two last portfolios of Mr. Muirhead Bone's "War Drawings" display him as a very versatile executant as well as the masterly artist which he is commonly known to be. In Part IV., for example, 34, the heads of three Welsh soldiers looking over the parapet, and 39, the ruins of Arras, are drawn with rough, almost careless, vigour; but 37, a scene depicting the embarkation of wounded at a quay-side, and 38, a lovely blue seascape with a line of destroyers running across below the horizon, are studies in finish. No. 40 makes a special feature of beautiful lighting, while 33 and 36 appeal by their power of narrative, the first being a modern battle, the fight for Lens, at its hottest, and the second depicting the ruined countryside after such titanic struggles.

Part V. contains several pictures of striking merit and three of particular interest to the medical profession. Number 43, "A Hospital Ship on the Seine," is unlike any other picture in the series, though 38 in the previous portfolio has some of its qualities. It is a wonderful drawing, half in wash, half in chalk, the delicate soft colouring being coupled with an accurate draughtsmanship which makes it a most striking little picture. In 42, "Waiting for the Wounded," the faces of the surgeons are good, and the general atmosphere of expectation all around is well suggested. In 44, "Rouen," Mr. Muirhead Bone gives us a characteristic long façade in retiring perspective, the fine bridges over the river being drawn parallel to the spectator and one above the other in a very effective manner. 46, again, is a long street scene, the market-place of Cassel. This is a busy little city in the Department of the Nord, a few miles south of Dunkirk, and is not to be confused with Cassel, the chief town of the Prussian province of Hessen-Nassau, which as yet is far away from our battle line. 47, "On Board a Battleship," shows the deck of a huge ship with the gun-turret seen near and the enormous muzzle cutting the picture nearly in halves. It is effective, but the sandy brown and blue in which it is coloured strikes the eye a little unpleasantly. Lastly, the gem of this portfolio is 50, "The Seven Cranes," in delineating which, with their accompanying furniture and tackle, Mr. Muirhead Bone has evidently revelled in the crisscrosses and silhouettes of a fascinating subject.

THE LANCET.

LONDON: SATURDAY, MARCH 30, 1918.

Fortitude.

IT is a great thing in the face of trouble to have been prepared beforehand for it, when to become involved in it is to a certain extent in accordance with reasonable anticipation. If the British nation, whose national temper in the ordeal of the last three and a half years has been, on the whole, remarkably calm and brave, had found itself unexpectedly, and in compliance with no prevision or provision on the part either of its military commanders or of its civilian rulers, bereft in a few days of much of the territory gained at great expense nearly two years ago, there can be no doubt that the surprise and disappointment would have been of a most serious nature. As it is, although the loss is there and may even be greater before it is less, it has been faced with fortitude, the mischief to a great extent having been discounted before it occurred. The intention of the massed German attacks, whose imminence had never been concealed, probably because such attacks were the only policy left open to their strategists, was obvious to all: and that the attacks could be made, and therefore would be made, with overwhelming numbers was a direct sequence of the cessation of hostilities in Russia. On the spirit with which the nation has met the situation we must all congratulate ourselves. To medical men that spirit is perfectly familiar. It is the spirit of what one calls "a good patient," that patient whom nurses and doctors alike know will succeed in his struggle with disease, because he faces the troubles incidental to disease with confidence in the ultimate issue. As long as the national spirit remains what it is, ready to bear the troubles that are the logical outcome of the circumstances, so long is ultimate success a question of time, and time is wholly in our favour. We have lost valuable, if doubtful, help in the East, but it is replaced from the West by help of whose value there is no doubt whatever; that the loss has made itself felt before the gain could be fully available is the reason for temporary retrogression. Let us lift up our hearts. Let us remain good patients.

The outburst of furious fighting on the Somme front finds us far more prepared than before in medical affairs, and this is a thing of enormous importance alike from the point of view of humanity and of man-power. Our hospital arrangements have developed unceasingly; conditions of transport of the wounded have become methodical; methods of treatment have been tested and sifted, so that in many directions a standard of therapeutics is arrived at, time hitherto used in experimentation and comparison of techniques and figures being saved. And especially have these methods of treatment developed along lines leading to that intensive study which is the marked feature of all modern research. The large general methods to be employed in military surgery have been arrived at by collation of results at different fronts and in different conditions. The needs of flying men should now receive proper and intelligent attention at the hands of the medical department of the Air Service, with the double result that accidents will be prevented by careful recruiting and training, and that evidence will accumulate as to the factors which lead to accidents. Other examples of the intensive study of disease are furnished by the centres for the treatment of orthopædic cases and of cases requiring plastic surgery; but to multiply instances might be to detract attention from the immediate needs. Let it be remembered, however, that all this work means incalculable benefit to the brave men who are fighting a desperate battle for the civilisation of the future, and we call it to attention at this moment because those who look upon the last few hours of war as having undone much that the past eighteen months took to accomplish should comprehend that we are to-day in all departments of our activities, as in the medical section, more prepared to face ill-turns. Fortitude is to-day reasonable as well as necessary.

Events in France have certainly again led to a shortage of medical men with the Army, for it stands to reason that in any toll of prisoners taken from us a percentage will represent the medical personnel of the forces. And that percentage must often be a high one, as in the zone of the clearing stations mobility cannot be a feature, while further forward the duty of the medical man keeps him beside patients who cannot make good their retreat. Our number of civilian medical men available is small, and in many directions that number has been reduced to a level which has given civilian authorities anxiety; but that situation will have to be faced, and it is our belief that the voluntary spirit of medical men will face it. Doubtless there are medical men of military age who, though with many reasons to expect and deserve exemption, will not try to secure it, but all medical men of military age, if they have already done medical service, should be ready to report themselves prepared to return to duty. We are informed that the circumstances in which employment can be found for medical men, who are over 55 years of age but willing and fit for service, will shortly be made the subject of official announcement, and it is to be hoped that no long delay will ensue before the necessary directions are in the hands of those to whom the appeals are made. Every one of our colleagues who responds immediately to these appeals will be performing an act of practical patriotism, as well as of individual fortitude.

Annotations.

"Ne quid nimis."

AMNESIA AND PAIN.

As reported in our issues of March 16th and March 23rd, the Hunterian Society, at a meeting on March 6th, discussed the question of the advantages and disadvantages of twilight sleep. We published last week the full text of Dr. G. Blacker's opening remarks on which the debate ensued. With the somewhat complex questions of the technical effect of scopolamine-morphine narcosis on mother and infant we are not concerned in this annotation; but certain parts of Dr. Herbert Spencer's contribution to the discussion have a wide bearing on the subject of pain in general, and raise an interesting psychological point. Dr. Spencer said he regarded the "painless labour" of twilight sleep as a "cruel and dangerous fraud" on mothers and babies. He roundly declared it untrue to speak of painless labour in a woman who cries out and gives every sign of suffering acute physical pain, although she may forget it later; and went on to say that the honest thing is to tell her that she will feel the pains but usually will not remember them afterwards in the joy of motherhood. It is not, of course, to be argued that pain, according to the accepted definition of the word, is being experienced and appreciated because a woman cries out though she is under the influence of a narcotic. Reduced to its lowest terms, the matter involves the interpretation of subjective phenomena, one of the most difficult in the whole range of psychological inquiry, yet one of the most important. Assuming for the sake of argument that pain, as a sensation, is comparable to the accepted sensations of tactile, thermal, and other origin, we suppose it will be granted that for the perception and interpretation of painful stimuli complete integrity of (1) peripheral sense-receptors, (2) sense-conveying paths, (3) sense-perceiving centres, and (4) association or memory centres is required. For the functional activity of (3) and (4) consciousness is a *sine qua non*; otherwise expressed, any abnormal or pathological condition disturbing consciousness must infallibly impair the perception of any sensory stimuli, including those of pain, or these, if they are perceived, will at least be materially modified. If consciousness is in abeyance, or partly so, or in any way dulled, the sensorium is just so much the more incapable of perception or appreciation of painful stimuli, although the degree of narcosis may not be sufficient to interfere with reflex response to these stimuli. Abundant clinical and experimental evidence can show that motor response to an irritant is not always an indication of pain. The decerebrate frog moves its limbs in response to an irritant just as the normal animal would do. In the case of general anæsthesia some physiologists hold that loss of pain-perception precedes loss of consciousness, others that irritant or painful stimuli reach the brain as though the patient were conscious, and exert the same motor reaction, but the patient is no longer aware of them. Supposing, however, that pain as such is felt during delivery under "twilight sleep," but that with subsequent progression of the anæsthesia the memory of the pain is wiped from the cortical slate, is there any distinction between joy and scopolamine as an obliterator of painful memories? In one case, no doubt, we are dealing with a psychical, in the other with a physiological, process; but if the result can be guaranteed in either case we suppose the individual concerned will be indifferent as to the means. That woman should, as far as possible, be protected from the exhausting effects of prolonged pain when her time comes is a proposition which surely commands universal assent. Our attitude must be one of unremitting endeavour to relieve human suffering, but not necessarily at the cost of added risk to the patient. More evidence will certainly be forthcoming as to the virtues and danger of twilight sleep, in regard to both mother and infant; we must be prepared to accept that evidence at its proper value.

PUBLIC KITCHENS AND SCHOOL CHILDREN.

DURING the last three years the number of school meals provided by local education authorities for children whose parents are too poor to feed them properly at home has steadily diminished. The total number of such meals, which amounted in 1913–14 to 14½ millions, fell in 1916–17 to 5¾ millions, and has decreased still further since then. While it is thus evident that poverty is no longer the serious factor that it was in the malnutrition of the school-child, the new difficulty which has arisen from lack of opportunity to obtain, and of means to cook, a proper diet for children, has become serious enough to claim the concerted attention of the Board of Education and the Ministry of Food. Up to the present the Board has kept to its policy of raising the standard of home cooking on economical lines by means of instruction given at cookery centres. In the present emergency it has now recognised the necessity of using some of these centres as national kitchens in areas where there is difficulty in making provision elsewhere. The Board, however, still draws the line at recognising as school attendance the work of children who may be employed at these kitchens. Parents are encouraged, as far as possible, to obtain cooked food for their children at the national kitchens to be consumed at home, and only where mothers are employed during the daytime, or the distance from school is great, is the local authority authorised to provide meals at school, and then only at the cost of the parents. The conflict of interests between the Education and Food Ministries will be watched with care both by medical and educational authorities; while the necessity for adequate nourishment is, of course, paramount, there is much to be said both for the humanising influence of the common school meal and for an attempt to improve the conditions of the home.

THE ORIGIN AND TREATMENT OF CAUSALGIA.

THIS condition of painful burning sensation in certain nerve areas due to a lesion more or less distant was described by Weir Mitchell in 1864 as a rare disease, but latterly, owing to the war, a large number of cases have been observed and commented upon, and some have a special interest as representing the first cases of causalgia in the limbs treated surgically. Causalgia may be defined as a nervous condition characterised by intense painful hyperæsthesia, with trophic and vaso-motor disturbances arising from more or less serious nervous or vascular

lesions. In 1916 Leriche formulated the hypothesis that the clinical picture of causalgia was due to a neuritis of the sympathetic, and that in wounds of nerve or arteries it was not the arterial lesion which caused the condition, but the lesion of the vascular sheath in which is contained the greater part of the regional sympathetic plexus, and he founded his belief on the fact that the area of vaso-motor disturbances did not correspond either to that supplied by the nerve or the artery, but that it made its appearance exclusively when a vascular and nervous lesion co-existed, or when the nerve injured was supplied by a special artery containing many sympathetic nerve elements. In a preliminary note on the trophic disturbances found in gunshot injuries of peripheral nerves, which we print in another part of this issue, Dr. J. S. B. Stopford records the exact condition of an amputated limb which had been the seat of typical causalgia, or thermalgia, as he prefers to term it, and in which well-marked trophic changes had occurred. He found an endarteritis limited to the distal vessels of the limb, and advances evidence to suggest that these vascular modifications are secondary to the peripheral nerve lesion. They, in their turn, entail a condition of local ischæmia, to which muscular degeneration and contracture, and perhaps bony decalcification also, are due. His contention is that irritative nerve lesions can produce changes in the coats of the arteries supplied by the affected nerves, which changes are the really important factor in the development of so-called trophic disturbances. The further description of the examination of the nerves and other tissues, which is promised, will be awaited with interest. Successful treatment of this distressing affection should follow on our increasing knowledge of its causation. Supposing that the burning sensation was transmitted by the sympathetic fibres contained in the periarterial sheath, Leriche concluded that it would suffice to denude the artery of this sheath in order to effect a cure, and in 1916 he first performed the operation of sympathectomy on a case of causalgia in the upper limb by excising about 12 cm. of the brachial artery, thereby obtaining a rapid cure. Since then Dr. O. Tenani at the base hospital at Bergamo has operated successfully in two cases.[1]

The first case was that of a soldier with a bullet wound of the middle third of the left thigh, causing a large hæmatoma which was subsequently evacuated satisfactorily. A week later, however, the patient began to suffer from severe burning pain in the left foot, which gradually increased in severity, and developed paroxysms of unbearable agony which morphia failed to mitigate. The only relief obtainable was by plunging the foot in cold water or applying ice-cold packs. The foot was cyanosed and swollen, as was also the tibio-tarsal joint, and was maintained in a position of flexion, even the most limited movements of extension being abolished. Radiography disclosed no bony lesion, the muscles of the leg were atrophied, and there was tactile, painful, and thermal hyperæsthesia. Patellar reflex was sluggish, Babinski's sign and clonus absent, Lasègue's sign brisk, with almost entire abolition of excitability to galvanism in the muscles supplied by the anterior crural nerve. Dr. Tenani made an incision 15–16 cm. long, exposing the femoral vessels up to Hunter's canal, and excised the common sheath, tying the collateral vessels. Both femoral artery and vein seemed considerably reduced in calibre. Some new-formed masses of cicatricial tissue were removed at the same time. The painful symptoms were relieved at once and a complete cure resulted in a month.

The second case was a wound of the inguinal region, with symptoms similar to the first case, in which the sheath of the vessels in Scarpa's triangle was excised to an extent of about 12 cm. Complete cure resulted in 40 days.

[1] Il Policlinico, Practical Section, Feb. 10th, 1918.

It should be noted that Dr. Tenani's technique differed somewhat from that of Leriche, who excised the arterial sheath only, whereas the former removed that of the vein as well. The reason for this procedure is twofold, technical and clinical, since it is more easy and there is no risk of leaving any part of the injured sympathetic plexus. The ablation of the perivenous sheath, producing dilatation of the vessel and diminution of intravenous pressure, has, moreover, the object of furthering and increasing the effect of the changes in the circulation brought about by the resection of the periarterial sympathetic.

THE LEVELLING UP OF IRELAND.

LAST week in the House of Commons Captain D. Sheehan, Member of Parliament for Mid Cork, asked the Pensions Minister whether any medical referees had been, or would be, appointed in Ireland for the purposes of the pensions administration in that country; if so, what were their qualifications; and could he indicate the medical men from whom applications might be received. Mr. Hodge, in reply, announced the impending appointment of medical referees in Ireland, saying that the qualifications for the posts would be the same as those required for similar posts in Great Britain, any registered practitioner of substantial experience in general practice being entitled to apply. Mr. Hodge said that for some time negotiations had been in progress with the Local Government Board for Ireland and with the National Health Insurance Commissioners (Ireland) with a view to making arrangements for these appointments, adding that a representative of the Ministry of Pensions would shortly visit Ireland in this connexion. On the same day Mr. T. Scanlan, Member of Parliament for North Sligo, asked the Chief Secretary for Ireland whether the Notification of Births (Extension) Act, 1915, had up to the present been put in force in Ireland; whether the provisions of Section 2 of the Act had been adopted by any public or local authorities in Ireland; and whether any, and, if so, what steps had been taken by the Local Government Board or by any local authority in Ireland in connexion with the Act. Mr. Duke replied that arrangements for maternity and child welfare in pursuance of the Notification of Births (Extension) Act, 1915, had been undertaken by the local authorities of 26 urban districts (including the county boroughs of Dublin, Belfast, Londonderry, and Waterford), and of two rural districts. The arrangements, it is understood, comprise schemes of health visiting of mothers and young children by duly qualified nurses, provision of medical and midwifery attendance in necessitous cases of confinement not otherwise provided for, the institution of maternity centres and day nurseries, and the supply of milk and dinners for necessitous mothers and young children. An Exchequer grant will be available to defray half the cost of the foregoing services, and in the current financial year will be distributed by the Local Government Board to 24 local authorities and to 28 voluntary agencies administering approval schemes. Further schemes on similar lines are being formulated and show that the Government is striving to make Ireland share in the progress of the rest of the Union, but other circumstances do not fit the picture. We recorded recently the deep dissatisfaction which prevails in Ireland at the inability of the Poor-law Medical

Service to obtain a reasonable readjustment of their emoluments, and we suggest that the schemes for the amelioration of social conditions in Ireland, as indicated above, might well be preluded by more intelligent treatment of the profession without whose coöperation no good results can be obtained.

TROPHIC CHANGES ASSOCIATED WITH LESIONS OF POST-CENTRAL CORTEX.

IN a paper read recently before the Neurological Section of the Royal Society of Medicine[1] upon the muscular atrophy and changes in nutrition associated with lesions of the sensory cortex of the brain, Dr. Leonard Guthrie, speaking with especial reference to the possible existence of trophic representation in the post-central areas, pointed out that in all cases of post-central lesions of the brain a certain amount of muscular atrophy is noticeable within a few weeks after receipt of the injury. In unilateral lesions the atrophy is of the contra-lateral limbs and affects the distal more than the proximal portions of the extremities. It is more marked in the hand and forearm than in the upper arm, and in the foot and leg more than in the parts above the knee. In vertical injuries (e.g., those involving the superior longitudinal sinus) the atrophy of the limbs may be general, but chiefly affects the muscles of the legs below the knee. Within about a year of the injury certain changes in nutrition make their appearance in addition to simple muscular atrophy. These, he said, are most apparent in the hand, which loses its former characters, and, without being in any way deformed, becomes smaller and more delicate than the other, so that a glove which formerly fitted is too small, as the fingers become tapering, the pads thinned, and the nails long and narrow. He thus described the hand of such a subject:—

"The thenar and hypothenar eminences lose their prominence, and the lines of the hand in general are ill-defined or less obvious than those of the hand on the opposite side. In some cases it may be described as an expressionless, or infantile hand. In others it resembles a lady's rather than a man's, or that of an artist rather than that of an artisan. It is a hand which has regressed to an earlier stage of development, and has lost its individuality. X ray examination reveals slight rarefaction, and general diminution in size of the phalangeal and metacarpal bones, with loss of clarity in their outline. Muscular wasting is rapid in onset, but having reached a certain stage it is not progressive, but remains stationary in spite of treatment. It is usually, perhaps always, preceded by motor paresis, if not paralysis, which, however, passes off in a few hours, leaving the affected limbs weak but capable of all voluntary gross movements though not of movements requiring delicacy and precision. The weakness is not greater than can be accounted for by the atrophy."

Associated with these changes in nutrition the following conditions were noted by Dr. Guthrie as occurring in various degrees:—

(1) Slight defect in tactility and "atopognosis"; (2) coldness of the affected parts; (3) marked loss of appreciation of posture and passive movement, astereognosis, and inability to estimate difference between weights; (4) ataxy, and very marked hypotonia, especially of distal parts; (5) exaggeration of proximal tendon reflexes. Inconstancy in response to most tests of sensibility and hallucinations of senses of touch and posture were, he said, also characteristic of lesions of the post-central cortex. The errors in all cases resemble those met with in lesions of the spinal segments in being predominantly pre-axial, post-axial, or mid-axial in type, and thus confirming the view that spinal segments are re-represented in the sensory cortex. In regard to etiology of muscular wasting and other changes in nutrition described, disuse and paralysis may be excluded as causes. Loss of muscular sensibility, atonia, and ataxy may all exist without such changes in nutrition, and therefore cannot alone be held responsible.

Dr. Guthrie summed up as follows: "It is therefore probable that the post-central cortex possesses special trophic functions analogous to those exercised by spinal segments, closely allied to, and distinct from, other functions of the sensory cortex. The post-central cortex forms one large sensory end-station for the receipt of all afferent sensory impulses, and it is therefore reasonable to assume that in it is represented the apparatus in spinal segments which conserves and regulates nutrition, through the agency of the sympathetic and sensory system and under the hierarchy of the brain itself."

[1] Proc. Roy. Soc. Med., February, 1918, vol. xi., No. 4.

A REGISTER OF THE BLIND.

THE report of the Departmental Committee on the Welfare of the Blind contained a series of recommendations on which we commented in October last.[1] The Advisory Committee, which is assisting the Local Government Board to put these recommendations into effect, has at the outset met with the difficulty that no exact information is at present available in regard to the numbers of the blind or their particular needs. Obviously, this information is essential for any well-conceived plan of relief, and the help of local sanitary authorities and of guardians of the poor has been invoked in the compiling of a register. A large number of forms have been issued detailing 17 points on which information is required, and it is hoped that district nursing associations and health visitors will assist in filling them in. The information supplied will be treated as confidential and only used for other than statistical purposes with the consent of the person concerned. No entry will be made on the register unless the person is too blind to perform work for which eyesight is essential, as this is the definition of blindness adopted by the Local Government Board.

ACUTE TORSION OF THE WHOLE MESENTERY OF THE SMALL INTESTINE.

IN the *Journal of the Royal Army Medical Corps* Captain R. P. Garrow has reported a case of a very rare abdominal catastrophe—acute torsion of the whole mesentery of the small intestine.

A soldier, aged 20 years, while in the trenches was seized at 8 A.M. on April 30th, 1917, with pain in the abdomen, vomiting, and diarrhœa. He passed five stools, which he said were loose and black. At noon on the following day he was admitted to the casualty clearing station as a case of diarrhœa or dysentery. Two hours before ¼ grain of morphia had been given by the mouth. On admission he complained of severe pain in the abdomen with cramps in the thighs. The pulse was 140, small, and flabby, the respirations were hurried, the skin was cold, the facies was pale and distressed, and he was perspiring profusely. The abdomen was soft and easily palpated and there was no distension. Various diagnoses were suggested by those who saw him—dysentery, cholera, ptomaine poisoning, abdominal malaria, acute abdomen. He was treated without benefit as a case of acute bacillary dysentery. On microscopic examination of the stools no cholera-like vibrios were found. His general condition became worse. He vomited watery mucus and bile, and passed a small watery and mucous colourless motion. At 4 P.M. the abdomen was distended and somewhat resistant, though not hard, and the temperature was 101° F. The distension rapidly increased and the general condition became graver till death at 7.30 P.M., about 36 hours from the onset.

The necropsy showed acute torsion of the whole mesentery of the small intestine. Except the duodenum, 9 inches of the upper end of the jejunum, and 3 inches of the lower end of the ileum, the whole small intestine was of a deep plum colour and so distended as to fill the enlarged abdomen. The lumen was filled with ordinary intestinal contents,

[1] THE LANCET, 1917, ii., 654.

much blood, and gas. The surface was smooth and glistening throughout, and there was no peritonitis. Behind the dilated intestine could be felt a rope-like structure, about the thickness of the finger, stretched tightly over the lumbar vertebræ—the mesentery of the small intestine twisted in the direction of the hands of the clock. On untwisting there were found three and a half turns (about 1260°). No cause for the torsion could be found. Only about 66 cases of this condition appear to have been recorded. In 23 recovery took place after operation. The present case is remarkable in the extent of the torsion, which is usually about 180°, and in only two cases has it been found as much as 720°.

THE METROPOLITAN WATER-SUPPLY.

WE here deal briefly with the reports on the condition of the Metropolitan water-supply for the months of October, November, and December, 1917. In October the mean rainfall was 4·33 inches, being 1·07 of an inch above the average rainfall for that month during the previous 34 years. The results of chemical examination showed that all three raw river waters derived from the Thames, Lee, and the New river deteriorated in quality as judged by the albuminoid nitrogen, permanganate, turbidity, and colour tests. The filtered waters also showed some deterioration in chemical quality. Compared with the averages for the year 1916, all the raw river waters, however, contained fewer bacteria, while the filtered waters were in good condition. In November the rainfall, on the other hand, was below the average mean rainfall by 1·75 inch for that month during the previous 34 years. The water from the Thames improved in chemical quality, that from the Lee deteriorated, while the New River water improved in some respects but deteriorated in others. The filtered waters showed some variations, but all gave good bacteriological results. December was a relatively dry month, the rainfall being 1·33 inch, representing 1·70 of an inch below the average mean rainfall for that month during the previous 34 years. The raw river waters showed, on the whole, an improved chemical quality, as did also the filtered waters, while bacteriological examination of both waters returned an improved record. The efficiency of filtration is shown in the following statement: "In December 100, 100, and 72·2 per cent. of the samples of raw Thames, Lee, and New River water respectively, contained *B. coli* in 1 c.c. (or less) of water; while 82·6, 55·5, and 55·5 per cent. of the filtered water samples derived from the Thames, Lee, and New River respectively contained no typical *B. coli*, even in 100 times as much water—namely, 100 c.c."

ANATOMICAL NOMENCLATURE.

AT a meeting held recently at King's College, London, the Anatomical Society of Great Britain and Ireland, having received and unanimously adopted the report presented to it by its Committee on Nomenclature, resolved, without a dissentient vote, that the following paragraph from the report should be circulated among the several corporations and other bodies interested in the progress of medical education:—

"The committee, after consideration of the matter, unanimously reports that it sees no reason for departing from the use of the Old Nomenclature as the recognised medium of description for employment in anatomical text-books and departments, or by medical men in general; on the other hand, it thinks that there are very good reasons to be urged against the adoption of any other nomenclature for this purpose."

The paragraph is signed by Professor David Hepburn and Professor J. E. Frazer, as president and secretary respectively of the society, and may be taken as intended to discourage the hasty adoption at the present time of any alternative to the old nomenclature without endorsing the latter as incapable of improvement.

FOODSTUFFS FOR PATHOLOGICAL LABORATORIES.

THE Medical Research Committee have recently brought to the notice of the Food Controller the special difficulties confronting the directors of pathological and other scientific laboratories in the existing regulations relating to food-supply. Many instances have been brought to the notice of the Committee in which scientific work of the highest national importance, both for civilian medical practice and for the maintenance of the health of the Navy and Army, has been endangered by difficulties in obtaining necessary foodstuffs in sufficient amount or variety, though the total amount required is quite negligible in relation to the general food-supply. The Ministry of Food have now issued a Memorandum (Food Office Instruction No. 15) for the guidance of Food Control Committees, stating that Lord Rhondda is authorising laboratories duly licensed by the Home Office under Act 39 and 40 Victoria, Cap. 77, to obtain supplies of any rationed article on production to the supplier of a certificate signed on behalf of a laboratory to the effect that they are necessary for the scientific purposes indicated. In due course special order forms will be issued to such laboratories, while committees, it is stated in the Instruction, should assist the laboratories in obtaining necessary supplies of unrationed foodstuffs. A Statutory Order will shortly be issued by the Ministry of Food exempting from the provisions of the Food Controller's Orders the use of grain and other foodstuffs in any such licensed laboratories for the maintenance of animals or for the preparation of laboratory materials.

Dr. Norman Moore has been elected President of the Royal College of Physicians of London.

His Majesty the King has sent 4000 half-crowns towards the million Viscount Knutsford is collecting for the London Hospital.

THE annual Oration of the Medical Society of London will be delivered by Dr. Theodore S. Hyslop on Monday, May 13th, at 8 P.M., on "Degeneration in Art, Science, and Medicine."

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

SUBSCRIPTIONS.

THE following subscriptions to the Fund have been received during the week ending March 25th:—

	£	s.	d.
Dr. Frank Hinds	2	2	0
Dr. G. A. Sutherland...	3	3	0
Major John Robert Williams, R.A.M.C.T.	1	1	0
Messrs. Parke, Davis and Co.	100	0	0
Dr. J. W. Papillon ...	1	1	0
Mr. G. H. Knowles ...	1	1	0
Mr. J. R. Phillips ...	0	10	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A Des Vœux, at 14, Buckingham Gate, London, S W. 1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

A PLEA FOR UNIVERSAL SERVICE.

BY EDRED M. CORNER, M.C. CAMB., F.R.C.S. ENG.,
SURGEON TO ST. THOMAS'S HOSPITAL, ETC.

Physical Condition of Recruits.

THE moment for seeing, talking to, and examining men from various positions and occupations came as it never came before when the examination of recruits under Lord Derby's scheme began. An exceptional opportunity was given to anyone interested in the condition of our fellow men. What did Lord Derby's scheme for recruiting disclose? The recruits examined under this scheme may be fairly taken as types of the physical development of the masses. My experience in this matter was gained largely through the kindness of Dr. T. G. Wakeling, and at Canning Town Hall by the courtesy of the mayor, Mr. Alderman Davis, and Mr. Birch.

Taken as a whole, the physical development of the recruits was good, but always something was lacking. The want showed chiefly in height and weight, although, as a rule, much of their work involved physical labour which might be expected to yield good physique. But the tale was very unvarying; those who had the height had not the weight, those who had the weight had not the height, and a number were deficient in both height and weight. Physical blemishes and deformities were noticeably very few in number. Those who had such came without fail to be excused from military service. Inefficiency from disease was far more frequent. These men had obviously received their full birthright of physical efficiency, coming into the world perfectly formed; but it was the development and growth of the originally physically perfect unit that were defective. This is the problem to be solved by those who wish to improve their kind.

Premature Ageing of Workers.

The experience of all who have tried to assist the masses is the same; offers left to voluntary acceptance are neglected by many. By means of compulsion, and only by such means, things are done uniformly and success obtained, in many instances to be partially stifled by the institution and recognition of "conscientious objectors." This is the weakness which has wrecked many schemes and made them only partial successes. Vaccination is a case in point.

Up to the present, in peace times, it has only been found necessary to employ compulsion in a few instances to enable schemes for the benefit of the masses to be carried out. Education, intellectual education, has been made compulsory; but as soon as school days are over there is no further exercise of authority. What happens as the result of this can be found in the examination of recruits. The men age too rapidly, so that the autumn of their life is largely wasted, a loss for themselves, those dependent on them, their municipality, and their nation. To support this personal observation I may make a quotation:—

"It is the regret of everyone who has studied our industrial system from within that men wear out too soon. By the time a man reaches his fortieth year, often earlier, he is too apt, in many vocations, to be an old man; and for that reason he is in danger of being pushed out of his place by a younger generation."

The core of the matter is that men in the working masses wear out earlier than in other classes, not because they are worse men but mainly because they have no break in their work, no rest, no change, from the day they leave school to take up a trade till the day they cease working for good and all. This tends, perhaps more than anything else, to narrowness of sympathy and bitterness of heart. Can one feel surprised at the unfairness and deep hates of industrial troubles? This unrest is a very real and great social danger which can be largely averted.

Compulsory physical education will do much to help. In class-schools, games are compulsory and are organised: it should be the same in mass-schools. But these recreations of physical culture must be continued after leaving school—i.e., after any age above 12 years—to supply a change of work. How is this to be done? To be effective it must not be voluntary but compulsory and universal—no conscientious objectors must be allowed. There is only one method that I know of rejuvenising and morally cleansing the nation—universal service, a system of drill and physical culture for men and women. Do not let it be termed conscription, that is a contentious word—but universal service which, by improving the individual, preventing his ageing, increasing his health, power, and ability, adds to his value to his family, his polity, and his nation—that is what is meant.

Universal Service: A Ministry of Health.

More than this, universal service would benefit not only the lower ranks. Some are born to lead and some to be led. Both teachers and taught learn much; and, above all, they learn to know each other. A teacher is not necessarily a better man than is his pupil; both are workers in different spheres. One learns how to give orders and the other how to receive them. It cannot but be hoped that many disagreements between masters and men would be avoided if the nation compelled both to learn to discipline themselves, to treat all justly, and to give and receive commands. There would not be "leaders" who have to be forced to move, but those who really could and would lead. It would be wrong to claim that universal service would rid us of the whole of this great secular and industrial evil; but to say that it would help to diminish it is only the truth. It would be an immensely great economic gain to all.

I may be asked, who would receive most benefit from this, the individual or the nation? Owing to the hundreds and thousands of hitches which must occur in the practice of universal service there is no doubt that the individual would receive most direct benefit.

Compulsory universal service is demanded from within a nation for the health and usefulness of its people, masses and classes alike. It is not a political party cry, nor is it demanded by any pressure from without, such as the necessities of war. It is a question not of foreign policy but of domestic policy for a Health Ministry and for none other.

When legislation was made by the Insurance Act and the Old Age Pension the nation acknowledged that it undertook the care of the health of its peoples. And yet it has not been considered necessary to place such schemes under the care of a Minister of Health, and it remains still under the attention of men harassed by other questions than those of purely domestic interest. Having already put hand to the plough the nation cannot draw back, but finding questions of national well-being sufficiently large, a Minister must be appointed to give them his whole-time consideration. He must then consider compulsory universal service—the physical culture of the men and women in the nation. As he comes to know his subject its size and its wide application will convince him that it will be beyond the ability of a single Minister to do the work properly in his whole time.

When the problems of reconstruction after the war come up for consideration thought will be given to the maintenance of public health, the first care of a Ministry of Health. People wear out too soon, and will not, or cannot under the present circumstances, take that change of work which is necessary for their well-being.

"Here is no question of Germany, where brutality is allowed to masquerade as discipline: we are thinking of our happier country." (Stephen Paget.)

In our social system man is not allowed to express and translate his feelings and impulses in action: he has had to develop control, so to speak, to sit on his own safety valve. But at what price? Instead of relieving feelings by action he suffers from pent-up emotion which, with his everlasting watchfulness, expresses itself in the wearing-out of the organism. For recreation man has recourse either to rest or to physical exercise; the former if he is past the meridian of life, the latter if he is not. But it would be better and wiser, far wiser, if by means of physical culture it were possible to forestall and prevent these lapses. So great is the need of mankind for bodily culture.

It seems cynical to state that by voluntary effort mankind, as a whole and not as an individual, cannot produce the best and long-continued work. It is now an axiom that the payment of taxes to the State is compulsory; the payment of rates is more or less compulsory. But in peace times, except for professions, taxes, and rates, compulsion very largely ceases when a boy leaves school! Should this be so? Compulsion in money payments and intellectual education preceded the entry into our national curriculum of compulsion in physical education.

Team-Work.

There is a lesson which perhaps above all others this war has impressed upon us. The lesson is how brilliant

but how useless are individual action and efforts. Only by the use and coördinated efforts of many can an aim so great as to be national be attained. The winning of a great object is the result of many and united efforts—team-work. Only by introducing the action of compulsion can material be created such as can be taught and disciplined by instruction to work together as a united team. The success of a team depends upon its excellent work, the result of its many members striving together in harmony, leaders and led alike. The good working of a team is rendered precarious if that team contains an unduly brilliant or an unduly dull worker; this is team discord, not team harmony. A team is, like a chain, as strong as its weakest link. Team-work is the A B C of *esprit de corps*—patriotism and unselfishness. Those in the ranks are taught to serve and obey, leaders are taught to lead; both are taught to be loyal, helpful, and respectful to each other. What a millennium in government seems to be conjured up! A government that really can govern! But such a result can only be achieved by means of compulsory universal service. Team-work can only be taught to the nation by means of compulsory universal service.

The necessity for good team-work for success in national life and in all other work is a modern requirement. The days of useful individual work have largely gone by, the value has gone out of them. The nation or Empire must now be taught team-work or it must fail.

Broadly speaking, education is twofold, the education of the mind and the education of the body. When a person exercises alone, he alone benefits. This is physical exercise as it is ordinarily understood, and it makes for individual physical culture. Let the exercise, physical or mental, be taken in conjunction with others and ideas of the negation of self for the benefit of the group appear and are inculcated. Let the exercise be a game, and this is still more evident. Physical culture is therefore a very broad term embracing both the development of the individual and of groups of individuals; by merely increasing the size of the groups physical exercise becomes national work. Not alone is the individual improved but the nation participates in the benefits.

Team-work is the greatest educator of mankind which exists. The teams may be extended to classes, masses, nations, and international groups called allies. Exercise in an individual makes for health and harmony, curing ill-health and discord. Following out the logical sequence, an insight is gained into national health and national ill-health. War is a primitive method of national exercise which, though it may bring about improvements in national well-being, is so destructive as to be apt to produce inability on the part of a nation participating in it to regain health. It is therefore a bad international exercise, because it is destructive. Commerce, another form of national exercise, is non-destructive and constructive, and therefore better and more healthful. But it allows the individual freedom to work and serve for himself alone, and become thoroughly selfish. It almost encourages individual greed, and it allows individual decay, requiring the team-work of something like universal service to teach unselfishness and stop that decline.

The circle of argument has been completed—namely, the best way to maintain a good peace and a healthy commerce is to have universal service. Not war but universal service is the cure for national ill-health. An absolute monarchy is particularly conducive to universal service, republicanism is not. Universal service is essential to the well-being of a republic, otherwise its units may become so absorbed in the welfare of self that public spirit tends to die.

Let it not be forgotten, however, that an excess of team-work leads to softness of the individual, his particular inaction being overlooked amongst the actions of the team, just as an excess of individualism may lead to selfishness of the individual. Both must be guarded against. Individual efficiency is requisite for the success of team-work, and only by good team-work can great affairs succeed.

Conclusion.

Already compulsion exists in peace times with regard to taxes, rates, education, class-school games, and in tests for the practice of professions, the Navy, the Army, &c. In war-time the people have become used to it. Its use is therefore no innovation. Its action should not cease on leaving school, but should be extended, say, to the age of 45. I have spoken of universal service because nothing else which can be made compulsory would provide the change and exercise needed by the workers among our population. Its practice would require very careful consideration. Only by the action of compulsory service can be created a body of people who can be taught team-work in body and mind and be made fit to carry to a successful issue any enterprise in public or private life. It is absolutely necessary for the successful carrying out of any large steps for the general benefit of mankind.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

First Aid in Bombarded Paris.

THE growing frequency of bombardment in Paris from aircraft bombs and long-range shells has resulted in the organisation of a new public service to provide rapid help for the victims among the civil population, help rendered the more necessary since during bombardment all normal means of transport by motor-bus, taxicab, and Underground cease. The Under Secretary of State for the Service de Santé has sanctioned the transformation of all military hospitals and ambulances into permanent first-aid posts available for injured persons of whatever category. A medical officer is on duty continuously day and night. When a raid is announced an *équipe* arranged in advance and consisting of a surgeon, an assistant, and a radiologist is sent express by military automobile to each of a dozen principal surgical centres. Here they attend to the injured persons brought in from the surrounding district within easy reach of the hospitals, as well as other cases sent on from the less important hospitals, where on arrival they have been judged too severely injured to be properly attended to on the spot. Further, in each of the barracks and fire stations scattered over the capital a military médecin-major is continuously on duty, each for a period of 24 hours, ready in case of accident to sally forth at once to examine the wounded in his neighbourhood, render first aid, and secure their transport by stretcher to the nearest ambulance, from which a motor ambulance then conveys the severer cases to one of the 12 surgical centres. On the alarm being given all the wounded in each hospital are carried into the basement, where operating theatres have been installed as far as this is possible. Since bombardment has become a daily affair the transport to the basement involves great hardship to the severely wounded and to the recent operation cases, and an order has been given to evacuate all bed patients into the environs or further south.

Cutaneous Lesions in Shell Turners.

Dr. Thibierge, physician to the Hospital Saint Louis, has informed the Academy of Medicine of special cutaneous lesions observed by him in workmen employed on turning shell cases. Purulent pustules appear on the hands, neck, face, and internal surface of the thighs, and these unite to form large black scabs. Dr. Thibierge finds that the condition is due to dirty oil, projected from the steel cylinder during revolution, containing minute particles of steel which cut into the epidermis and open the way for infection, the particles themselves remaining as a blackish pigmentation. The oil being constantly fed by mechanical apparatus the soiling process goes on indefinitely. From the medico-legal point of view the condition must be regarded more as a normal occupational injury than as an accident.

March 25th.

BY the will of the late Mr. James Hora the testator left over £100,000 to the Samaritan Fund of the London Hospital.

EPSOM COLLEGE.—The Council of the College announce that there will be a vacancy for an entrance Salomons scholarship of £50 at the beginning of the summer term. The conditions of holding the scholarship are that the candidate shall show an adequate standard of education for his age and that his financial condition is such as to make it impossible or difficult to obtain an education at the College without the help of the scholarship. Applications should be sent to the secretary at the office of the College, 37, Soho-square, W.1, by April 6th.

Correspondence.

"Audi alteram partem."

THE HOME OF RECOVERY AT GOLDER'S GREEN.

To the Editor of THE LANCET.

SIR,—At the annual court of governors of the Hospital for Epilepsy and Paralysis, Maida Vale, W., held this afternoon, various references were made to the speech of Mr. Hodge at Worcester, reported in the *Times* of March 18th, and to the searching letter of Professor Elliot Smith in to-day's *Times*.

I was requested by the governors to communicate the following to you:—

1. That the establishment of the Home of Recovery at Golder's Green as a branch of this hospital was first considered in November, 1916, and was accomplished on May 30th, 1917, and a seal was set upon the undertaking by the visit on Oct. 19th, 1917, to the Home of Their Majesties the King and Queen, who were received by Mr. Hodge.

2. The men are received for treatment on the recommendation of the Ministry of Pensions, and have been invalided from the Services suffering from what is popularly known as "shell shock," as unfit for naval or military duties, unfit for work in civil occupations, and many of them unfit to return to their own homes. The great majority have passed through numerous military hospitals, both abroad and at home, and have been on the sick-list for periods varying from several months up to two and a half years.

3. In spite of this, of the 186 patients discharged during the last five months 53 returned to their former employers by arrangement with the Home, 33 went to new work found for them, 14 went to training in some skilled occupation, and 39 left "fit for work" and preferring to make their own arrangements, which they have not reported. Included in this number of 186 were 35 patients who were either medically unsuitable or who were not treated to a conclusion; that is to say, 66 per cent. of the men who were treated to a conclusion returned to work, and a further 24 per cent., making 90 per cent. in all, were rendered "fit for work."

I was further requested to send to you the following resolutions which the present patients at the Home (95 in all) have spontaneously and unanimously signed and sent to the committee.

1. That we, the undermentioned patients at the "Home of Recovery," Golder's Green" having benefited, and in many cases recovered, desire to express our contentment and satisfaction with remaining in this institution, having the utmost confidence in Mr. Burleigh, the medical officers, and the conditions generally of the hospital. Our past experiences in general hospitals have taught us to appreciate being separated from other cases, especially from the so-called "cheery man."

2. That all patients are agreed that after their experience of other hospitals and the company of the so-called "cheery chap," they prefer to risk the air-raid results before that of going to another hospital.

I am, Sir, yours faithfully,

CHARLES DRUMMOND,
Chairman and Treasurer.

Hospital for Epilepsy and Paralysis, March 22nd, 1918.

PNEUMOCOCCAL BRONCHITIS.

To the Editor of THE LANCET.

SIR,—The remarks of Dr. Samuel West in his letter in your issue of March 9th on varieties of bronchitis are interesting, but it always seems to me that it is possible to over-estimate the importance of the pneumococcus. Because a diplococcus is found in association with various morbid conditions and a diplococcus from those various morbid conditions answers to certain laboratory tests, it does not necessarily follow that the organism is in every instance the same organism. One needs to consider the evidence afforded by the human culture-medium as well as the evidence of the laboratory media.

Personally, I prefer the evidence of the human culture-medium. There are no two diseases of the lungs which clinically could well differ more markedly than lobar pneumonia and broncho-pneumonia when occurring in children. Uncomplicated lobar pneumonia is the least serious of acute diseases affecting children, broncho-pneumonia the most serious, with the exception of acute tuberculosis. Although in lobar pneumonia—as a rule—the consolidation of the lung is greater than in broncho-pneumonia, yet lobar pneumonia, unless accompanied by a serious complication such as suppurative pericarditis, virtually may be said never to cause death in a previously healthy child. In broncho-pneumonia, on the other hand, the mortality is something like 50 per cent. Again, in lobar pneumonia the temperature is generally persistently high for a few days and ends in a crisis, whereas in broncho-pneumonia the temperature wanders on in an intermittent way, it may be even for five or six weeks.

There is a wide gap between the two diseases as regards clinical features, danger to life, and morbid anatomy, and to assume, on laboratory grounds, that the micro-organism which causes the two diseases is the same appears to me to be unscientific; in other words, that it is basing judgment upon one small portion of evidence instead of taking a comprehensive view of the whole. It is true that what we call idiosyncrasy may complicate the evidence of the human culture-medium when considering the cause of disease, but, with regard to the above two diseases, peculiarities in the reaction of the human organism cannot be said to weaken the view above expressed. There are no bridges over the gulf between the two diseases. One never sees a lobar pneumonia materially prolonging its crisis, or a case with broncho-pneumonic lesions assuming the clinical features of a lobar pneumonia. It seems to me that there is still much to be learnt concerning the diplococci called pneumococci.

I am, Sir, yours faithfully,

March 20th, 1918. THEODORE FISHER.

To the Editor of THE LANCET.

SIR,—I was much interested by Dr. Samuel West's letter in THE LANCET of March 9th on Pneumococcal Bronchitis, and I should like to relate the following cases:—

On Jan. 4th last I was sent for to see a farmer aged 54. He was said to have "quinsy." He was a man of limited intelligence and difficult to understand when in health. He was evidently suffering from an acute affection of the throat, causing an enormous amount of secretion which he was constantly coughing, not up, but aside as it were, to enable him to breathe or speak. I got a look at his fauces with difficulty, as each attempt made him expectorate quantities of a brown fluid, but there was no membrane in the throat, which presented a swollen, shiny appearance. There was apparently no quinsy. He seemed so ill that I prepared instruments for tracheotomy when I got home. (I have since been told by Mr. Edward D. Davis that tracheotomy does not save these cases, but that they die of pneumococcal septicæmia.) The next day, however, he seemed better and was expectorating freely.

On the following two days he felt better, complaining mostly of a pain in the leg, which I thought was sciatica. His chest was full of râles, and he had continual cough. On Jan. 7th he was distinctly worse, with rapid breathing and a continual to-and-fro rattle in the throat which he was unable to relieve by coughing. Next day he was cyanosed and obviously failing.

He was seen with me by Dr. Edmund Hemsted. We diagnosed "capillary bronchitis." The patient died shortly afterwards.

On Jan. 12th I was asked to see his sister, aged 40, who had nursed him. She had exactly the same initial symptoms. I took a swab of her throat for bacteriological examination. On Jan. 13th she complained of a pain in the right side of the chest. I could detect no physical signs, but the temperature was high and the breathing rapid. On the 14th she had developed signs of broncho-pneumonia, such as one meets with in children, all over the right base in front and behind. Neither marked dullness nor evidence of consolidation was manifest. Her mother, aged 70, was now in bed with the same to-and-fro rattle in the throat. On the 15th the daughter died before I could reach the house.

On the 16th Dr. Hemsted kindly saw the mother with me. She was extremely ill, with signs of broncho-pneumonia. We took some blood for bacteriological examination. She died next day. The swab from the throat was reported by the bacteriologist, Dr. Robert Donaldson, Reading, to show large numbers of pneumococci, but no Klebs-Löffler bacilli, and from the blood he obtained a pure growth of the former organisms.

The points which struck me most forcibly about these cases were: 1. The marked initial throat symptoms, with enormous amount of secretion, truly "suffocative" and unlike anything I have seen. It reminded me of diphtheria in small children before antitoxin was used in the present dosage. 2. The absence of any signs of lobar pneumonia such as one has been taught to associate with a pneumococcal infection of the lung. The man had signs of acute bronchitis. The other two cases had signs of broncho-pneumonia. 3. The horribly fatal character of the disease and its infectivity. In less than a fortnight these three people were all dead.

I am, Sir, yours faithfully,

E. G. BEADON ADAMS, M.B., F.R.C.S.

Newbury, March 11th, 1918.

THE CAUSATION OF "TRENCH SHIN."

To the Editor of THE LANCET.

SIR,—The view that gaiters or puttees are the determining cause of the "shin" pain, so characteristic of a certain class of trench fever, receives support from an article in THE LANCET[1] by Lieutenant-Colonel Chambers, entitled "Trench Shin an Infectious Fibrositis." In this very interesting and valuable contribution Colonel Chambers states that "trench shin" is a different disease from "trench fever," and is caused in part by wearing tight puttees which obstruct the venous circulation and cause a continuous loss of heat, thus lowering the resistance of the fibrous tissue to infection. The assumptions that "trench shin" is a different disease from "trench fever," and that puttees play anything more than a very subsidiary part in the causation of shin pain, are both open to grave objections.

Cases of "trench fever" may be divided into three groups: (1) with simple fever alone; (2) with fever and "muscle" pain; (3) with fever and "shin pain." Frequently a patient at the commencement would be classified in Group 1. Later he develops what I have for convenience called "muscle pain," but which I agree is really due to a fibrositis; and later still he develops the pain in the shins or "shin pain." Or the order may be altered or the characteristics of Groups 2 and 3 may be combined.

If puttees were important factors all cases suffering from trench fever would develop "trench shin," as most men wear puttees, but only a certain number develop "shin" pain and tenderness. In putting on puttees one area of maximum constriction is about the junction of the middle and lower thirds of leg, the other area being below the tibial condyle, the intervening portion of the puttee being more or less loose owing to the action of the calf and other muscles. Assuming that constriction has anything to do with the "shin" pain, the areas of maximum shin tenderness ought to be the junction of the lower and middle thirds of tibia and in the upper third. Colonel Chambers says that the lower third is protected by the boot and escapes. My experience of cases during part of a winter in Amiens was that the lower third was more often and more severely affected than any other part of the bone, and that the upper third rarely suffered.

The soldiers of the Belgian Army and some of our Scotch regiments wear a puttee covering lower third of leg only. Amongst the latter I have seen most severe "shin" pain affecting the whole length of bone. The same applies, I believe, to cases in the Belgian Army. Then, again, men for special reasons have not worn puttees, and have when affected in some instances had the most violent and extensive "shin" pain. Many men who have been in bed recovering from wounds develop trench fever and quite as commonly develop "trench shin" as those men who have worn puttees. I have heard of nursing sisters who have developed trench fever with severe shin pain.

In many cases only certain localised areas about the size of a shilling will be found tender. In numerous cases one leg is very badly affected and the other leg is only slightly so or free from pain altogether. Pain and tenderness over the tibia are very common, and the constriction due to puttees is suggested as the reason, but pain and tenderness in other bones such as humerus, ulna, &c., are quite frequent, and could not be explained by any theory of constriction. It seems that there must be some other reason for this pain than constriction and that "trench shin" cannot be a clinical entity.

In Group 2 of cases of trench fever—viz., those with "muscle pain"—it will be found that the pain is most intense in places that have the maximum amount of fibrous tissue, thus confirming Colonel Chambers's theory of an infectious fibrositis. Such places, for example, are the sole of the foot, the thick aponeurosis covering the upper half or so of the anterior group of tibial muscles, the quadriceps tendons, the fascia lata, and the thick intermuscular septa of the thigh, the thick aponeurosis of the forearm which is attached to the ulna and helps to give origin to some of the forearm muscles, the tendinous intersections of the deltoid, the intermuscular septa of the arm, the ligamentum nuchæ, and the thick masses of fibrous tissue among the spinal muscles. In all these places pain is present, and is readily explained on the theory of it being the result of infectious fibrositis. The tendinous origins of the abdominal muscles from the lower ribs are also frequently affected, giving rise to symptoms resembling pleurisy or pleurodynia. The pain in the calves on pressure may be explained by the various aponeuroses and intermuscular septa deeply situated in these regions being inflamed.

The theory of trench fever being an "infectious fibrositis" may also be used to explain the neuritic symptoms. The fibrous tissue surrounding nerves may be affected and thus account for the tenderness of the ulnar, median, sciatic, and other nerves in various parts of the body, and also for the paræsthesia, tingling, &c., often present in the hands and feet.

The pain present in cases of Group 3—viz., those with fever and "shin" pain—is really the same kind of thing, but affecting mainly the periosteum, which is histologically largely fibrous tissue. The hyperæmia causes swelling and affects the nerve-endings, thus accounting for the severe "bone" pain. What the determining factor is in causing the fibrous tissue of the periosteum to be more liable to be affected in some cases than the fibrous tissue in other situations at present is unknown, but is analogous to the selective action of strychnine, for example, on nerve tissues, of which there are many examples in medicine.

For the preceding reasons it seems clear that "trench shin" is not a distinct clinical entity, but merely a variety of trench fever, and that puttees have little, if any, share in the causation of "shin pain."

I am, Sir, yours faithfully,

J. ALLAN BERRY,
Captain, N.Z.M.C.

March 8th, 1918.

[1] Chambers: THE LANCET, 1917, i., 752.

CHRONIC GONORRHŒAL INFECTION OF THE PROSTATE AND VESICLES.

To the Editor of THE LANCET.

SIR,—I consider Mr. Rolf Creasy's letter on the above subject in your issue of March 23rd both encouraging and illuminating. Five years ago last December I published my first article on this subject in the *Ophthalmoscope*. Consequently it only appealed to a very limited section of the profession. Also five years ago Mr. Canny Ryall had the first cases of recurrent irido-cyclitis sent to him from Moorfields Hospital; the two incidents may or may not be related. Since then *many* such R.I.C. cases have been treated at All Saints' Hospital. In view of these facts, what surprises me is that in a period of five years there has not been a single affirmation of my 1912 findings, only one negation, refuted, and a few unscientific "pious opinions" of a negative character. My statement, "I have *never* seen a case of recurrent gonorrhœal irido-cyclitis in which any attempt has been made to attempt a *cure*," still holds good. I now know with pleasure for the first time that attempts at cure, and no doubt cures, have been made by others, but in no case which has come under my care had there been any previous attempt.

In the four cases quoted in my paper the vesiculæ were not apparently infected, though Dr. G. Stoker reports such an infection in another later case. In the article of 1912 I, however, mentioned the vesiculæ; describing the technique for demonstrating the gonococcus, I stated: "Thirdly, even if the urine is quite clear, one should go a step further and massage the prostate and vesiculæ seminales via the rectum." In my early cases, wishing to obtain first-hand knowledge and not being in touch with the genito-urinary world, I undertook the massage myself, but I found I had not the necessary experience to diagnose abnormalities of the prostate and vesiculæ; hence the scanty reports in my 1912 cases. Cases of irido-cyclitis due to the staphylococcus and coli communis—organisms which Mr. Ryall also finds in these cases—are clinically quite different from the gonococcal cases; they are readily diagnosed with the help of an opsonic index, the *cause* is treated efficiently, and consequently recurrence is uncommon and not at all a feature of these infections.

I am, Sir, yours faithfully,

A. S. COBBLEDICK.

Bolton-street, W., March 25rd, 1918.

THE CAUSE AND PREVENTION OF MYOPIA.

To the Editor of THE LANCET.

SIR,—I have read with much pleasure the recent important contributions to the discussion. The point which I do not seem to have made clear to Dr. Giri is that it is the parts where the greatest pressure is applied which give way. If he will refer to my diagram again he will see that the pressure at the outflow at A is negative. The head of the optic nerve corresponds to a point in the cistern E, and closing the aperture A whilst greatly increasing the pressure at this point and at B does not affect the pressure at E at all.

There is also the question of the introduction of a membrane or obstruction in a hydrodynamic system; the pressure is much greater on the proximal side of the obstruction. This is provided by the retina, which may become detached before the pressure is distributed. The conditions are quite different from those producing glaucoma. In glaucoma there is a constant pressure, and in other parts of the body a constant pressure produces atrophy, whilst an intermittent pressure causes hypertrophy. Even with a constant pressure in the young there is a general dilatation of the eye, as in buphthalmos, the eye being so soft the difference between the lamina cribrosa and the rest of the sclerotic is not so marked as in the adult.

The following two cases are interesting.

A man staying at a farm had to help to hold a bull which had become wild, and he had to exert his strength to the utmost; he ruptured himself, became myopic to a low degree and blind in one eye through detachment of the retina in the one afternoon. He stated that he had previously very good sight. (Numerous cases could be given of detachment of the retina through whooping-cough.)

A young musician with low myopia, in indifferent health, was advised to take a rest and spend a year on a farm. He found that digging caused him great pain in the eyes, headache, and bleeding at the nose. His myopia rapidly increased, though previously he had no discomfort with his eyes in his musical work.

It is particularly those persons of poor physique and unaccustomed to the form of exercise that appear to suffer; slow and careful training would strengthen the eye. The anatomical arrangement of the lymphatics, arteries and veins of the eye appears to be such as to prevent, as far as possible, the effects of varying pressure and make the eye a self-regulating apparatus. The ophthalmic artery passes through the optic foramen below the optic nerve, the ophthalmic vein through the sphenoidal fissure. Any distension of the sheath of the optic nerve would press on the ophthalmic artery and diminish the amount of blood entering the eye.

The results of treatment on the suggested lines appear to be very satisfactory.—I am, Sir, yours faithfully,

London, March 19th, 1918. F. W. EDRIDGE-GREEN.

TRENCH FEVER.

To the Editor of THE LANCET.

SIR,—I would like to be given the opportunity of endorsing the opinions of Captain Sundell and Captain Nankivell regarding trench fever in their paper on that subject which appeared in THE LANCET of March 16th. The clinical account entirely coincides with my own observations and differs little (except in being more complete) from an account of the disease as seen by myself in the spring of 1915 at a C.C.S in France, which was published in THE LANCET of Sept. 25th, 1915. I believe this latter was the first account of the disease published, but the unfortunate title in use was not employed then. Trench fever is a misleading term. Even for those early cases seen in April, 1915, it would have been so, for among them were two men who had never been in the trenches, and at that time were not very near them. They were never in contact with those suffering from the disease until they themselves contracted it, nor were they brought in contact with the clothing or belongings of sick men, yet both were carefully observed from the onset and through the acute stages of a typical attack. Since then I have seen many similarly circumstanced who have contracted the disease. The two types of disease that have been included under the same name differ so essentially from one another that, in the absence of an ascertained common cause, a common name is hampering and misleading. If the short type can justly be called trench fever, the long type offers no excuse for perpetuating the name. A better name would be "shank fever," since it might direct attention particularly to the cardinal symptom of this clinical entity—namely, acute pain in the shank of the legs at the height of the attack. Two features noted in the early cases do not appear to have been remarked in the later ones—namely, giddiness and herpes—the former was a striking, tiresome, and constant symptom to which I drew special attention, while herpes about the lip was frequent, and in one case the whole of the beard area was covered by it. As to sequelæ, complaint of pain in the shins is made by many patients months after the initial attack, and heart hurry without other disorder is common and often resists all manner of treatment.—I am, Sir, yours faithfully,

J. H. P. GRAHAM,
March 22nd, 1918. Major, R.A.M.C. (S.R.).

PAYMENT OF SURGEONS ATTACHED TO V.A.D. HOSPITALS.

To the Editor of THE LANCET.

SIR,—It has been open to any surgeon attached to V.A.D. hospitals to apply for payment of his services, and one man in Herts applied and has been paid. The British Medical Association has passed a resolution which suggests compulsory application for payment for all such surgeons, whether they desire to do so or not.

The Hertfordshire Local Committee recently sent me a letter accompanied by three application forms, and practically demanded that I should apply for payment.

The letter and forms departed into my waste-paper basket.

The County Director for the Red Cross then called a meeting of surgeons attached to V.A.D. hospitals. I attended this at some inconvenience, and was not surprised to hear that there was a very large majority which refused to apply for payment. Of the minority two or three wrote letters from which it appeared that application was made on the grounds of the policy of the British Medical Association. I listened to various reasons which were given by surgeons who attended the meeting, for the demand, and was surprised at their futility.

It appears to me that there is a far from satisfactory position adopted in this matter.

Surely, the surgeons attached to these hospitals have a right to be consulted before any local committee takes such a step, and our personal liberty is not a thing which can be lightly surrendered, especially when it is open to anyone, who has sufficient grounds, to obtain payment without any difficulty. I am, Sir, yours faithfully,

Hatfield, March 22nd, 1918. LOVELL DRAGE, M.D.

THE SERVICES.

ROYAL NAVAL MEDICAL SERVICE.

D. J. Max to be temporary Surgeon.

ROYAL ARMY MEDICAL CORPS.

Capt. J. B. A. Wigmore relinquishes the acting rank of Lieutenant-Colonel, and reverts to the acting rank of Major, with pay and allowances of his substantive rank.

Capt. W. B. Purdon, D.S.O., M.C., retains the acting rank of Lieutenant-Colonel whilst in command of a Convalescent Depôt.

To be acting Lieutenant-Colonels whilst in command of a Medical Unit: Capt. A. N. R. McNeill, Capt. W. H. S. Burney, Major J. A. Turnbull, D.S.O.

Temp. Capt. J. C. Pounden to be temporary Major (without increased emoluments) whilst specially employed.

Capt. A. W. Byrne is placed on retired pay on account of ill-health.

H. W. Kaye, late temporary Captain, is granted honorary rank of Captain.

Officers relinquishing their commissions: Lieut.-Col. H. C. Drury, Major J. Lumsden, Capt. J. W. Killen, Capt. C. M. Benson, and Capt. S. H. Law, having ceased to be employed with No. 83 (Dublin) General Hospital. Temp. Capts. C. E. Boyce, E. J. M. Watson, A. C. Tait, G. Muir, H. T. Douglas, A. Pimm, H. McM. Donaldson (on account of ill-health contracted on active service, and is granted the honorary rank of Captain). Temp. Lieuts. W. B. M. Martin, K. C. Edwards.

Canadian Army Medical Corps.

Temp. Major P. G. Brown to be acting Lieutenant-Colonel while specially employed.

Temp. Major V. E. Henderson, from Central Ontario Regiment, to be temporary Captain.

Temp. Major (acting Lieut.-Col.) A. Croll relinquishes the acting rank of Lieutenant-Colonel on ceasing to be specially employed.

Canadian Army Dental Corps.

Temp. Lieut.-Col. (acting Col.) J. A. Armstrong, C.M.G., to be temporary Colonel.

The undermentioned temporary Majors (acting Lieutenant-Colonels) to be temporary Lieutenant-Colonels: O. K. Gibson, A. A. Smith.

Temp. Capt. (acting Major) A. W. Winnett to be temporary Major.

Temp. Lieut. L. E. Harriman to be temporary Captain.

SPECIAL RESERVE OF OFFICERS.

W. L. Dandridge and A. S. Westmorland (from University of London Contingent, O.T.C.) to be Lieutenants.

TERRITORIAL FORCE.

Lieut.-Col. J. F. Dobson, from permanent personnel, to be Lieutenant-Colonel, whose services will be available on mobilisation.

Major (temp. Lieut.-Col.) E. C. Montgomery-Smith, D.S.O., to be Lieutenant-Colonel.

Capt. C. Rogers, M.C., and Capt. B. Stracey relinquish their commissions on account of ill-health, and are granted the honorary rank of Captain.

Lieut. H. L. Farmer to be Captain.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The first article in the February issue of this journal is a study of the mechanism of the agglutination and absorption of agglutinin reaction, together with an examination of the efficacy of these tests for identifying specimens of the meningococcus isolated from 354 cases of cerebro-spinal fever by Captain W. J. Tulloch. Some Strains of Organisms found in Dysentery Suspect Cases in France, showing Peculiar Agglutinating Phenomena and Sugar Reaction, is the title

of an article by Captain F. N. B. Smartt; while Clinical Observations on 100 Cases of Trench Nephritis are reported by Captain S. C. Dyke; and there is a posthumous article by Captain C. K. McKerrow, originally written as a thesis for the Cambridge M.D degree, on Pyrexias of Doubtful Origin in an Infantry Battalion on Active Service, which is described by Colonel R. J. Blackham, in a foreword as a valuable contribution to medical literature. Of particular interest is a study of yellow fever by "A Patient," which describes his recollections of an attack of this distressing disease in a remote bush station of the northern territories of the West Coast of Africa and quite out of any line of communication such as would give facilities for the spread of yellow fever. His conclusion is that "it would be a good thing if every white man going to the Coast were taught in the plainest language that yellow fever is endemic, the hour of infection being probably between 6 and 7.30 P.M., when men sit out in the open and get bitten most. They should be taught that it is almost certainly fatal, and that any chance they have is in their own hands. They need expect nothing to relieve their pains or shorten their disease in the way of drugs, but they will make things very much easier if they will lie still and drink only water and never worry about food for days on end."

URBAN VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING FEBRUARY, 1918.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 4·6 per 1000 of the population, estimated at 4,237,387 persons; in the three preceding months the rates had been 6·3, 5·3, and 5·0 per 1000. The lowest rates in February were recorded in Paddington, Hammersmith, Fulham, the City of Westminster, Hampstead, Hackney, and the City of London; and the highest rates in St. Pancras, Shoreditch, Bethnal Green, Stepney, Poplar, and Southwark. Five cases of small-pox were under treatment in the Metropolitan Asylums Hospitals at the end of the month; they all belonged to the borough of Stepney and were the first cases occurring in London since June, 1916. The prevalence of scarlet fever was again less than in the preceding month; this disease was proportionally most prevalent in Kensington, St. Pancras, the City of London, Wandsworth, Deptford, and Lewisham. The Metropolitan Asylums Hospitals contained 961 scarlet fever patients at the end of the month, against 1335, 1246, and 1068 at the end of the three preceding months; the weekly admissions averaged 111, against 191, 138, and 152 in the three preceding months. The prevalence of diphtheria was about equal to that in the preceding month; the greatest proportional prevalence of this disease was recorded in Holborn, Shoreditch, Bethnal Green, Southwark, Bermondsey, and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1656, 1656, and 1658 at the end of the three preceding months, numbered 1665 at the end of February; the weekly admissions averaged 211, against 239, 203, and 199 in the three preceding months. The prevalence of enteric fever was less than in any of the six preceding months; of the 23 cases notified in February, 4 belonged to Poplar, and 2 each to Hackney, Stepney, Southwark, Battersea, Wandsworth, and Deptford. There were 28 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 36, 32, and 26 at the end of the three preceding months; the weekly admissions averaged 5, against 5, 5, and 4 in the three preceding months. Erysipelas was proportionally most prevalent in Chelsea, Shoreditch, Bethnal Green, Poplar, Southwark, Battersea, and Greenwich. The 18 cases of puerperal fever notified during the month included 3 in Fulham, 3 in Lambeth, 2 in Hammersmith, and 2 in Chelsea. Of the 32 cases of cerebro-spinal meningitis, 4 belonged to Stepney, 4 to Camberwell, 3 each to St. Pancras, Southwark, Lambeth, and Battersea, 2 to Shoreditch, and 2 to Poplar. No case of poliomyelitis was notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ended March 2nd the deaths of 5192 London residents were registered, equal to an annual rate of 16·0 per 1000; in the three preceding months the rates had been 12·5, 16·3, and 19·4 per 1000. The death-rates in February ranged from 10·1 in Hampstead, 11·0 in Lewisham, 11·4 in Fulham, 12·1 in Wandsworth, 12·3 in the City of London, and 12·6 in Camberwell to 19·5 in Poplar, 20·0 in Finsbury, 20·1 in Southwark, 20·8 in Bermondsey, 23·4 in Bethnal Green, and 27·9 in Shoreditch. The 5192 deaths from all causes included 595 which were referred to the principal infectious diseases; of these, 196 resulted from measles, 8 from scarlet fever, 69 from diphtheria, 256 from whooping-cough, 6 from enteric fever, and 60 from diarrhœa and enteritis among children under 2 years of age. No death from any of these diseases was recorded during the month in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Paddington, Kensington, Chelsea, Hampstead, Stoke Newington, Wandsworth, and Woolwich; and the highest death-rates in Finsbury, Shoreditch, Bethnal Green, Stepney, Southwark, and Bermondsey. The 196 deaths from measles were 22 above the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal last month in Islington, Finsbury, Shoreditch, Bethnal Green, Stepney, and Southwark. The 8 fatal cases of scarlet fever showed a decline of 12 from the corrected average number. The 69 deaths from diphtheria were 14 more than the average; the greatest proportional mortality from this disease occurred in Holborn, Bethnal Green, Stepney, Bermondsey, Lambeth, Lewisham, and Woolwich. Whooping-cough showed, as in the two preceding months, a very marked excess over the average, the deaths from this disease numbering 256, against a corrected average of 96; this disease was proportionally most fatal in Finsbury, Shoreditch, Bethnal Green, Southwark, Bermondsey, and Deptford. The 6 deaths from enteric fever were 2 below the corrected average. The 60 fatal cases of diarrhœa and enteritis among children under 2 years of age showed a decline of 16 from the average; the greatest proportional mortality from this cause was recorded in Fulham, St. Marylebone, St. Pancras, Shoreditch, and Stepney. In conclusion, it may be stated that the aggregate mortality in London in February from these principal infectious diseases was 39 per cent. above the average.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING FEBRUARY, 1918.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1918.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.								Deaths from all causes.	Death-rate per 1000 living.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years)	Total.	Annual rate per 1000 persons living.		
LONDON	**4,237,387**	**5**	**446**	**802**	**—**	**23**	**—**	**18**	**165**	**32**	**—**	**1491**	**4·6**	**—**	**196**	**8**	**69**	**256**	**6**	**60**	**595**	**1·8**	**5192**	**16·0**
West Districts:																								
Paddington	130,668	—	6	20	—	1	—	—	2	—	—	29	2·9	—	1	—	1	4	—	2	8	0·8	135	13·5
Kensington	152,144	—	24	15	—	—	—	—	3	—	—	42	3·6	—	1	—	—	5	—	3	9	0·8	187	16·0
Hammersmith	117,965	—	6	12	—	—	—	2	2	1	—	23	2·5	—	4	1	—	5	—	1	11	1·2	120	13·3
Fulham	149,428	—	13	17	—	—	—	3	2	—	—	35	3·1	—	—	—	1	5	—	4	10	0·9	131	11·4
Chelsea	57,298	—	7	8	—	—	—	2	3	—	—	20	4·6	—	—	—	1	—	—	—	1	0·2	74	16·8
City of Westminster	132,853	—	17	11	—	1	—	1	2	—	—	32	3·1	—	—	—	2	9	1	1	13	1·3	147	14·4
North Districts:																								
St. Marylebone	98,573	—	5	17	—	1	—	—	4	—	—	27	3·6	—	1	—	—	2	—	5	8	1·1	130	17·2
Hampstead	81,470	—	3	15	—	—	—	—	2	—	—	20	3·2	—	—	—	1	2	—	—	3	0·5	63	10·1
St. Pancras	196,812	—	37	43	—	1	—	1	6	3	—	91	6·0	—	3	1	4	11	—	5	24	1·6	263	17·4
Islington	309,359	—	26	61	—	—	—	—	14	—	—	101	4·3	—	26	1	6	20	—	4	57	2·4	409	17·2
Stoke Newington	49,776	—	2	9	—	—	—	—	1	1	—	13	3·4	—	—	—	—	—	1	—	1	0·3	62	16·2
Hackney	209,636	—	16	17	—	2	—	—	9	1	—	45	2·8	—	9	—	—	7	—	—	16	1·0	239	14·9
Central Districts:																								
Holborn	38,161	—	2	14	—	—	—	—	—	1	—	17	5·8	—	—	—	2	1	—	—	3	1·0	49	16·7
Finsbury	74,230	—	6	14	—	—	—	—	3	1	—	24	4·2	—	7	1	—	10	—	—	18	3·2	114	20·0
City of London	20,113	—	3	1	—	—	—	—	—	1	—	5	3·2	—	—	—	—	—	—	—	—	—	19	12·3
East Districts:																								
Shoreditch	99,932	—	7	27	—	—	—	—	12	2	—	48	6·3	—	18	—	2	22	—	6	48	6·3	214	27·9
Bethnal Green	115,552	—	7	38	—	1	—	—	6	—	—	52	5·9	—	31	—	5	32	—	—	68	7·7	207	23·4
Stepney	258,396	5	28	67	—	2	—	1	12	4	—	119	6·0	—	24	1	7	17	—	7	56	2·8	372	18·8
Poplar	155,095	—	16	37	—	4	—	1	13	2	—	73	6·1	—	11	—	3	10	1	—	25	2·1	232	19·5
South Districts:																								
Southwark	177,166	—	21	56	—	2	—	1	14	3	—	97	7·1	—	17	1	3	16	—	4	41	3·0	273	20·1
Bermondsey	113,661	—	8	34	—	—	—	—	3	—	—	45	5·2	—	5	—	3	23	—	1	32	3·7	181	20·8
Lambeth	283,729	—	30	38	—	1	—	3	6	3	—	81	3·7	—	19	—	7	10	—	5	41	1·9	354	16·3
Battersea	159,402	—	15	26	—	2	—	1	8	3	—	55	4·5	—	3	—	3	7	—	3	16	1·3	173	14·1
Wandsworth	310,858	—	43	57	—	2	—	—	7	1	—	110	4·6	—	1	—	3	6	1	4	15	0·6	289	12·1
Camberwell	249,749	—	31	48	—	—	—	—	12	4	—	95	5·0	—	6	1	3	11	—	4	25	1·3	241	12·6
Deptford	107,696	—	17	20	—	2	—	1	5	—	—	45	5·4	—	1	—	1	13	—	—	15	1·8	130	15·7
Greenwich	94,452	—	16	26	—	1	—	—	6	—	—	42	5·8	—	4	—	1	3	1	—	9	1·2	109	15·0
Lewisham	162,901	—	25	38	—	—	—	—	7	1	—	71	5·7	—	1	1	7	4	1	—	14	1·1	138	11·0
Woolwich	130,313	—	15	16	—	—	—	1	2	—	—	34	3·4	—	3	—	3	1	—	1	8	0·8	137	13·7
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

Obituary.

ROBERT SALUSBURY TREVOR, M.B., B.C. CANTAB.,

PATHOLOGIST TO ST. GEORGE'S HOSPITAL AND DEAN OF THE MEDICAL SCHOOL.

THE tragic end of Robert Salusbury Trevor is a great blow to a large circle of friends as well as to St. George's Hospital and Medical School, to whom the sudden loss seems well-nigh irreparable. Born in 1872, the son of Colonel Salusbury T. Trevor, of the Indian Army, Trevor was educated at Marlborough and Clare College, Cambridge, where he graduated in the mathematical tripos in 1894. His family has been connected with the military and civil services of India for many generations, and it was Trevor's hope that he too might have carried on the tradition and have served in the Army or the Indian Civil Service; but to his lasting grief disqualification on medical grounds, which made him subject to intermittent attacks of severe pain, prevented him from carrying out his intention. He then turned to medicine, and having entered at St. George's in 1897, he took his M.B. and B.C. in 1900. From that time he was continuously associated with the hospital and medical school. After some preliminary appointments he followed Dr. H. D. Rolleston as curator, and the development of the museum, to which he added many important specimens and the elaboration of a system of indexing which greatly facilitated the use of the valuable pathological material contained in the hospital records, occupied much of his attention. His long tenure of official positions concerned with pathology enabled him to acquire a vast amount of material and first-hand information which, especially in later years, he used freely in his lectures, and so stamped them with individuality. As a result these proved very attractive to the student. The course of his work led him to the medico-legal side of pathology, and here again his lectures on forensic medicine were alive with personal experience and anecdote, so that what is often a dreary subject became most popular.

Trevor's tenure of the office of dean of the school fell in very troublous times, and the difficulties of carrying on the work of the hospital and medical school during the war caused him the greatest anxiety. It was, however, as dean and in his relations with the students that he met with his greatest success. His capacity for taking a personal interest in the student, his broad humanity, coupled with very considerable firmness, his keen sense of humour, and his very high ideals and standard of honour gave him great influence with all who came into contact with him. As a member of the Conference of Deans he largely influenced the attitude that body assumed with regard to the admission of Indian students to the London schools. With regard to the abstract advisability of the admission of women medical students to men's schools he suspended judgment, but realised that, at any rate in the smaller schools and as a matter of necessity, it was an experiment that had to be tried. In the words of one of the admitted students, "He spared no pains to make the experiment a success, and his wise judgment, kindliness, and tact smoothed away many difficulties. Whether the student was man or woman made no difference: he was ever ready with advice and help."

Trevor was a man of very wide interests in directions far apart from his professional work. His great private affections were for music and Anglo-Saxon literature. He had a beautiful voice, which he had trained with the greatest care, and he was ever ready to use it for the benefit and pleasure of others. When at Cambridge he was a prominent member of the Musical Society. His knowledge of Anglo-Saxon literature was remarkable, and he possessed a valuable library of books on this recondite subject. He was also a keen Freemason, and at the time of his death was holding office as Director of Ceremonies in the Lanesborough Lodge, of which he was a Past-Master, and as Junior Warden in the Old Marlburian Lodge. Notwithstanding the large amount of extra work which the war had thrust upon him, he took on duties as a special constable, and though strongly urged by his friends to give them up he refused to do so. His humanity showed itself in his interest in birds and animals, and he had many personal friends amongst the inhabitants of the Zoo. The loss of such a man with his keen interests, high ideals, and intense hatred of everything which did not satisfy the most rigid standards of honourable conduct must seem to those who knew him quite irreparable.

The War.

DOCTORS FOR THE ARMY.

ALL medical men up to the age of 55, being fit for service, are advised to hold themselves prepared. We understand that some official announcements will soon be made as to the employment of medical men who have not had commissions previously.

THE CASUALTY LIST.

THE following medical officers appear among the casualties announced since our last issue:—

Accidentally Killed.

Capt. P. Levick, R.A.M.C., received his medical education at King's College Hospital, London, and at Cambridge University, and qualified in 1893. He was in practice at Guildford prior to joining the R.A.M.C.

Died.

Lieut. G. G. C. Adams, R.A.M.C., qualified in Ireland last year, and thereupon joined up.

Wounded.

Capt. H. C. Colver, R.A.M.C.
Capt. F. W. White, R.A.M.C.
Capt. W. J. Phillips, M.C., Australian A.M.C.

THE HONOURS LIST.

The following are the statements of service for which the decorations recorded in THE LANCET of Nov. 3rd, 1917, p. 695, were conferred. All are members of the R.A.M.C. unless otherwise stated:—

Distinguished Service Order.

Temp. Capt. John Caruthers Sale, M.C.

For conspicuous gallantry and devotion to duty during an attack. He collected the wounded over a large tract of country exposed to heavy fire, and continuously went out by night in advance of the front line searching for the wounded, many of whom he brought back over most difficult ground and under heavy fire. His coolness and determination were a splendid example to his stretcher bearers.

Bar to the Military Cross.

Temp. Capt. Hugh Ross MacIntyre, M.C.

For conspicuous gallantry and devotion to duty. When in charge of the evacuation of the wounded he from time to time led his stretcher-bearers and cleared the wounded, although exposed to fire from snipers. He worked untiringly and incessantly for three days without sleep, and it was due very greatly to his efforts that the regimental aid-posts were kept clear of wounded and cases quickly evacuated to the advanced dressing station. He is fearless in the face of danger, and by his splendid courage and example he inspired confidence in his men.

The Military Cross.

Temp. Lieut. Henry Marston Layard Crawford.

For conspicuous gallantry and devotion to duty. He dressed and collected the wounded under heavy shell fire, and on the withdrawal he remained with the rearguard, still under heavy fire, collecting more wounded. By his pluck and determination he succeeded in bringing in all his wounded, though compelled to make a wide detour through exceptionally heavy and difficult country.

Temp. Capt. Leslie Haden Guest.

For conspicuous gallantry and devotion to duty. On the night of an attack he gallantly led his stretcher squads under heavy shell fire and collected wounded who were lying out on newly captured ground. By his courageous example and disregard of danger he was the means of saving many wounded men.

Temp. Capt. William Llewellyn Aplin Harrison.

For conspicuous gallantry and devotion to duty. He established his aid-post within 200 yards of the front line as soon as the objective had been reached, and thereby saved many lives. Though his aid-post was twice destroyed by shell fire he continued at work with complete disregard of danger, inspiring all who came in contact with him by his splendid example.

Temp. Capt. William George Johnston.

For conspicuous gallantry and devotion to duty. Whilst in command of the stretcher-bearers evacuating the wounded, he worked under shell fire for 55 hours, leading his bearers time after time to collect wounded lying out in the open. On another occasion he went out under heavy shell fire and succeeded in getting out alive some men who had been buried in the forward trenches. His fearless conduct, disregard of personal danger, and devotion to duty saved many valuable lives.

Temp. Capt. Robert Kennon.

For conspicuous gallantry and devotion to duty. During the recent operations this officer continued for three days to dress wounded, during which period he was continually under heavy shell fire and his dressing station was blown in. With the greatest coolness and devotion to duty he continued his life-saving work and was a splendid example to all ranks.

Temp. Capt. John Kirton.

For conspicuous gallantry and devotion to duty during an action. He went forward under shell fire to dress and collect wounded and help and encourage the stretcher-bearers at their duties, working for five consecutive days without rest. It was largely owing to his excellent work that the evacuation of the wounded of the division was successfully carried out, and by his efforts many wounded men were got into safety.

Temp. Capt. Wilfred John Pearson.

For conspicuous gallantry and devotion to duty. When in charge of the evacuation of the wounded he worked under heavy shell fire for 50 hours without rest, and it was largely due to his untiring efforts that the wounded in this sector were got away so quickly. On one occasion, though caught in the barrage of the enemy's heavy guns, and though severely shaken, he continued to work without intermission, his untiring labours being instrumental in saving many valuable lives.

And the following for those recorded in THE LANCET of Nov. 24th, 1917, p. 805:—

Distinguished Service Order.

Temp. Capt. Gordon Wilson Armstrong.

For conspicuous gallantry and devotion to duty. He worked in the open under continuous and heavy shell fire, and dressed and evacuated 117 stretcher cases from his aid-post in 27 hours. Later on, while the shelling was very severe, he volunteered to go in aid of an officer and an orderly, carrying them to the aid-post one after another on his back. Though wounded during the second journey, he refused to leave his post, remaining with his battalion until it was relieved.

Major Sydney Vere Appleyard, Australian A.M.C.

For conspicuous gallantry and devotion to duty. He established a forward dressing station immediately in rear of the front line during an attack, and attended continuously to the wounded, frequently going out and dressing cases in the open under heavy shell fire. His dressing station was hit by a shell, and, though he was badly shaken, he continued his work with great determination and devotion to duty. His fearlessness was an inspiration to all, and was the means of saving many lives.

Major William Wallace Stewart Johnston, M.C., Australian A.M.C.

For conspicuous gallantry and devotion to duty. While the enemy were shelling very heavily the positions where assaulting troops were assembled he went out into the open with an absolute disregard of personal safety and attended to the wounded where they lay. After the attack was launched he continued to work for several hours under very heavy enemy barrage until severely wounded. On many previous occasions his fearlessness and devotion to duty while acting as regimental M.O. have been most conspicuous.

Bar to the Military Cross.

Capt. William McMeekin Chesney, M.C., Spec. Res.

For conspicuous gallantry and devotion to duty when in charge of stretcher-bearers. He continually visited the forward aid-posts throughout the day and supervised the evacuation of the wounded under very heavy shell and machine-gun fire. Though wounded he refused to quit his post until he had rendered a valuable report on the evacuation of the wounded. He worked with indefatigable energy and great courage throughout.

Temp. Capt. Robert Welton Hogg, M.C.

For conspicuous gallantry and devotion to duty. While in charge of the forward bearer-post he worked indefatigably for three days, evacuating the wounded from the regimental aid-posts in the line, moving about continuously under heavy enemy barrages. It was entirely due to his fine example and untiring energy that over 200 stretcher cases were safely got away from the front during the first six hours of the attack.

Temp. Capt. Hubert Francis Wilson, M.C.

For conspicuous gallantry and devotion to duty. He established his regimental aid-post in a shell hole close to the firing line, and maintained it in spite of heavy shell fire. During an attack he went forward under heavy fire and attended to the wounded, who could not be brought in by the stretcher-bearers. His devotion to duty and unceasing energy is deserving of the highest praise.

Temp. Capt. Maurice Bertram Lawrie, M.C., South African Medical Corps.

For conspicuous gallantry and devotion to duty. He established a collecting-post in an advanced position, and when his post was filled with wounded he continued to dress cases in the open, though fully exposed to shell fire. In order to satisfy himself that all the wounded had been brought in he personally searched the whole of the brigade front.

The Military Cross.

Capt. Bernard Gordon Beveridge.

For conspicuous gallantry and devotion to duty. He was in charge of a divisional collecting-post and relay bearer-posts during an action, and organised and carried out the evacuation of the wounded over the open under continuous fire. It was only by his unfailing courage and energy that the work was successfully accomplished.

Capt. Vernon Carlisle Brown, Australian A.M.C.

For conspicuous gallantry and devotion to duty when working at an advanced post. When the officer in charge of the post and a stretcher-bearer were wounded he attended to them under a heavy bombardment and assisted in carrying them to a place of safety. He showed great courage and coolness.

Temp. Capt. Dimock Stanley Cassidy.

For conspicuous gallantry and devotion to duty. When a party of men were gassed in a mine shaft he went down and remained there all night preparing to render first aid. He did not leave his post even when seriously affected by gas.

Capt. George Eustace.

For conspicuous gallantry and devotion to duty. He was going forward with a party which came under a very heavy barrage. He remained out in the barrage attending to the wounded regardless of danger, and carried one wounded man several hundred yards through the barrage to safety.

Capt. Frederick George Harper.

For conspicuous gallantry and devotion to duty. He worked incessantly, attending to the wounded under heavy shell fire. He set a magnificent example to all, and undoubtedly saved many lives.

Temp. Capt. James Jack.

For conspicuous gallantry and devotion to duty. He established forward collecting-posts and dressed and removed the wounded with great coolness and disregard of danger during a period of four days and nights. Most of the time he was under heavy shell fire, and set a fine example of courage to his men.

Capt. Charles Hallily Kellaway, Australian A.M.C.

For conspicuous gallantry and devotion to duty. For 24 hours following the attack he worked without a moment's respite, dealing with the wounded of five battalions in addition to his own, and at the same time controlling the work of his stretcher-bearers.

Capt. Harold Howard Leeson.

For conspicuous gallantry and devotion to duty. He showed the utmost courage and total disregard for personal safety when commanding stretcher-bearer squads. His splendid example under heavy shell fire inspired those working under him.

Temp. Capt. Charles Fellowes Maclachlan.

For conspicuous gallantry and devotion to duty. He worked continuously for 48 hours under heavy shell fire, attending to the wounded, much of his work being done in the open. His services were of the greatest value, and he set a magnificent example to all.

Temp. Capt. Peter Malcolm MacLachlan.

For conspicuous gallantry and devotion to duty during an attack. As soon as the battalion captured its objective he went to the front line under heavy shell fire to bring back the wounded. He did excellent work under heavy fire throughout the operations, and showed great gallantry and disregard of danger.

Capt. James Stewart McConnachie.

For conspicuous gallantry and devotion to duty. He was in charge of a divisional collecting-post during an attack and organised and carried out the evacuation of the wounded under heavy fire, in the course of which his post was several times hit. He carried on his work during several counter-attacks by the enemy, and set a splendid example of coolness and courage.

Capt. Patrick Joseph Francis O'Shea, Australian A.M.C.

For conspicuous gallantry and devotion to duty. While in charge of stretcher-bearers he displayed the utmost courage and devotion under heavy shell fire. His fine example was largely responsible for the maintaining of the lines of evacuation from the front line to the headquarters.

Temp. Capt. Alexander Waugh Young.

For conspicuous gallantry and devotion to duty. He worked untiringly in attending to the wounded, continually going out into the most forward area under heavy machine-gun fire with his men, encouraging and directing them in their work. It was due to him that nearly 200 cases were evacuated from the line.

The *Military Cross* has also been conferred upon:—

Capt. John Joseph Harper Nelson, I.M.S.

For conspicuous gallantry in action. He tended the wounded in the open for a long period, although exposed to heavy fire of all descriptions. He showed fearlessness throughout, and his example was of great value to all.

A CHAIR OF AMBULANCE.

The College of Ambulance in Vere-street (London, W. 1) is now in its fifth year of activity, and Sir James Cantlie has convincingly demonstrated its value as a training centre. 20,000 students have passed through it, and the decision taken by the meeting on Saturday last, over which Sir James Reid presided, to place the college on a permanent basis is obviously the right course to follow. Whether military or civil, whether called ambulance or first-aid work, the immediate application of medical and surgical principles to the accident or emergency is a subject which deserves a place of honour in the medical curriculum. Correct methods of dealing with an "acute" accident may often prevent it from becoming "chronic," and knowledge of what is best to do does not come by nature, nor is it a fixed and unchanging system. The last four years have shown a wonderful growth of ingenuity around the whole subject. We trust that Sir James Cantlie will have his hope realised of seeing a Chair of Ambulance founded in the University of London and the College of Ambulance linked up with the medical schools.

OBITUARY OF THE WAR.

LEWIS MOYSEY, B.A., M.B., B.C. CAMB.,
CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain L. Moysey, who was lost in the sinking of the *Glenart Castle* on Feb. 26th, at the age of 48, was younger son of the late John Moysey, of Guildford. He was educated at Repton and Caius College, Cambridge, entering the medical school of St. George's Hospital, London, from which he qualified M.B., B.C. Camb. in 1895. After doing post-graduate work at Vienna and filling a surgeoncy at the Paddington Green Children's Hospital he settled in practice at Radford, Notts. In October, 1914, he obtained a commission in the R.A.M.C. (T.F.), being promoted captain in the following year. One who knew him well writes of Captain Moysey as a keen palæontologist, deeply interested in the fossil yield of the coal-fields amid which he lived. He had recently generously handed over his fine collection of plant remains to Cambridge University and his animal fossils to the Geological Survey.

Captain Moysey married in 1902 Amy Frances, sister of the late Dr. J. Noble, of Nottingham, who survives him.

WALTER AP SAMUEL JAMES GRAHAM, M.R.C.S. ENG.,
MAJOR, ROYAL ARMY MEDICAL CORPS.

Major W. Ap S. J. Graham, who died on Feb. 23rd at the age of 54, was eldest son of the late General Sir James Graham, K.C.B., and was educated at Cheltenham College, taking his medical course at St. Mary's Hospital, London, and qualifying in 1888. After holding a series of resident appointments he entered the R.A.M.C., becoming major after 12 years' service in 1903. He had served in the Nile campaign, gaining the British and Egyptian medals, and was stationed in India at the outbreak of the war, whence he was invalided home in 1915. Although unfit afterwards for active service, he was engaged on home duties until the onset of the double pneumonia which terminated fatally on the ninth day. Quiet and reserved in manner, he won the respect of his colleagues by unfailing courtesy and evidences of whole-hearted devotion to duty. Major Graham married in 1906 and leaves a widow but no children.

THE DUMP.—Volume III. of *The Dump*, a magazine of 36 pages, the organ of the 23rd Division, contains humorous articles and drawings from the pen and brush of many well-known contributors. The artists include Byam Shaw, Gerald Hudson, Dorothy Heather, Major A. F. Iles, Brenda Parker, Lieutenant-Colonel Pigott, Gladys Peto, and Laurie Taylor. The prose writers include Colonel R. J. Blackham, Assistant Director of Medical Services, who is the subject of a good humoured sketch by an anonymous writer in which the doings of Arjaybe are told in the style of the Book of Chronicles. The address of the editor of *The Dump* is "A and Q Office, H.Q. 23rd Division."

THE MEDICAL STUDENT AND NATIONAL SERVICE.

We noted in THE LANCET of March 16th (p. 419) that the new National Service instruction in regard to medical students practically made medical study a reserved occupation. Several correspondents write to point out the invidious distinction which now exists between the position of the first-year civilian medical student and the man who enlisted on or soon after the outbreak of war without having completed a year's study. Probably the number of the latter who survive and who wish to resume their medical career is very small, and we agree with our correspondents in thinking that the hardship might be removed without any appreciable loss to combatant efficiency. Such a concession on the part of the Army authorities would be warmly appreciated by those concerned, and would serve to remove a feeling of grievance quite disproportionate to its numerical extent.

EDUCATIONAL WAR FILMS.—The kinema has been put to an instructive and interesting use in the official war films, "With the Forces on the Palestine Front" and "Woolwich Arsenal and its Workers," exhibited under the direction of the Ministry of Information at the New Gallery Kinema, Regent-street, W., on March 21st. The Palestine film shows an armoured-car expedition to Siwa over 200 miles of trackless desert, operations on the Palestine Front, and the British entry into Beersheba, suggesting how the enormous difficulties encountered were overcome by the troops. The Arsenal film illustrates the everyday life of a great industrial city, from its tailoring and printing to the making of more direct engines of war.

Medical News.

UNIVERSITY OF MANCHESTER.—At the March examination the following obtained the diploma of Public Health of the University:—

G. M. Coope, Isaac Black, T. E. Flitcroft, J. E. Lezama, and H. B. R. Stephens.

UNIVERSITY OF ABERDEEN: GRADUATION IN MEDICINE.—The following degrees have recently been conferred:—

DOCTOR OF MEDICINE (M.D.).

Frederick Leonard Keith, W. Barclay Livermore, John Macpherson and William Linton Millar (commendation for thesis).

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY (M.B. AND CH.B.).

James Duncan Brown (second-class honours).

Ian George Innes, Winifred Mary Allan Kindness, Mary Jane Mowat MacLaren, and Alexander Ritchie.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the committee, held on March 12th, 16 cases were considered and £180 voted to 14 of the applicants. The following is a summary of some of the cases relieved:—

Daughter, aged 65, of M.R.C.S. Eng. who practised at Bristol and London and died in 1854. Was able to earn her living by teaching music until a recent severe illness. Only income from friends and other sources £46 16s. The Fund helped her to purchase a piano 40 years ago to enable her to earn a living. Voted £15 in 12 instalments.—Widow, aged 48, of M.B. Lond. who practised at Parkstone and died in 1917. Applicant left with two children, aged 9 and 6, and help is asked towards the education of the eldest boy, who is delicate and needs special training. Income from all sources, £155. Rent and rates £48. Voted £2 and referred to the Guild.—L.R.C.P. & S. Edin., aged 42, married, who practised in North Wales, and is now in London. He joined the R.A.M.C. in August, 1914, and was invalided out in March, 1917. Suffers from asthma and hoped to obtain a pension from the War Office. Recently started a new practice, which brings in £1 a week. Is rather financially involved and requires help to pay interest on an overdraft at the bank. Voted £20.—M.R.C.S. Eng., aged 48, married, who practised at Southampton and Eastleigh. Has four children, ages 15 to 2½ years. Joined the R.A.M.C. in 1915, and was later invalided out with a pension of £140 a year. During his absence at the war lost most of his practice, and now unable to work owing to ill-health. Voted £20.—Widow, aged 70, of M.B. Edin. who practised at Bolton and died in 1905. Applicant was left fairly well off, but owing to a defaulting solicitor lost most of her income, which is now 10s. a week. Relieved twice, £24. Voted £12 in 12 instalments.—Widow, aged 60, of M.R.C.S. Eng. who practised in Cumberland and died in 1903. Applicant takes an occasional boarder, otherwise no income. Suffers from rheumatism. Has five children, none able to help. Relieved 12 times, £139. Voted £15 in 12 instalments.—Wife, aged 39, of M.R.C.S. Eng. who practised at Bournemouth and now in an asylum. There are two children living with relations. Applicant is suffering from an advanced stage of consumption. Only income about £10 a year. Relieved four times £55 10s. Voted £12 in six instalments.—Widow, aged 63, of M.D. Edin. who practised at Edinburgh and died in 1918. Applicant left entirely without means, and has very indifferent health. One daughter living at home, and helps all she can. This is the only source of income. Relieved nine times, £82. Voted £12 in 12 instalments.—M.R.C.S. Eng., aged 51, who practised at Liverpool and abroad.

where he suffered from sunstroke and had to return home, and has not been able to work since. No income. Lives with his aunt, who cannot afford to keep him. Relieved five times, £45. Voted £10 in two instalments.—Daughter, aged 54, of M.R.C.S. Eng. who practised in London and died in 1895. Left without means. Receives £13 a year from another charity. Ill-health prevents her working. Relieved five times, £63. Voted £12 in 12 instalments.—Widow, aged 61, of L.R.C.P. Dub., who practised in Bedfordshire and died in 1900. Lost her income through a defaulting trustee. Cannot work at present owing to ill-health. Lives in cheap rooms. Relieved twice, £19. Voted £10 in two instalments.

Subscriptions may be sent to the acting honorary treasurer, Dr. Samuel West, at 11, Chandos-street, Cavendish-square, London, W.1.

THE GILCHRIST STUDENTSHIP.—Miss Mary K. F. Lauder (London School of Medicine for Women) has been elected to the Gilchrist Studentship for Women at the University of London.

HUNTERIAN SOCIETY.—The annual meeting of this society will be held on Wednesday, April 10th, at 5 P.M., at the house of the Royal Society of Medicine, 1, Wimpole-street, W., followed at 5.30 by a discussion to be opened by Dr. Edwin Ash on "Nervous Breakdown."

ROYAL INSTITUTION.—The lecture arrangements at the Royal Institution after Easter, at 3 o'clock in the afternoon, include two lectures on Scientific Signalling and Safety at Sea, by Professor J. Joly; five lectures on British Anthropologists: (1) Barrow-explorers, (2) Cave-hunters, (3) Craniologists, (4) Field-anthropologists, (5) A Master of Method—Pitt-Rivers, by Professor A. Keith; two lectures on Present-day Applications of Experimental Psychology, by Lieutenant-Colonel C. S. Myers; two lectures on Rheims Cathedral, by Sir Isambard Owen; three lectures on the Abode of Snow, its Appearance, Inhabitants, and History, by Lieutenant-Colonel Sir Francis Younghusband. The Friday meetings will commence on April 12th, when Professor E. C. C. Baly will deliver a discourse on Absorption and Phosphorescence.

UNIVERSITY OF GLASGOW.—Under the bequest of the late William Brechin Faulds, a Glasgow solicitor, a Research Fellowship in Medicine of the annual value of about £200, and tenable for three years, has been founded in the University. The Fellowship will be awarded by the Senatus, on the recommendation of the Faculty, to a recent graduate in medicine who has shown capacity for original work. He must devote himself to some branch of inquiry or research approved by the Senatus, and not engage in professional practice during his tenure of the Fellowship. He may carry on his investigations for one year of his term elsewhere than in Glasgow. The Ferguson Trustees have also announced their intention to establish a Research Fellowship of about the same annual value for investigations in applied chemistry. It will be tenable by Bachelors of Science of Glasgow, and the Fellow may work either in the University or in the Royal Technical College affiliated to it.

ABERDEEN MATERNITY HOSPITAL.—The annual report of the Aberdeen Maternity Hospital for 1917 states that the number of cases treated in the hospital for the year was 223, a decrease of 9 on the previous year. Seventy-eight out-door cases were treated, an increase of 21. It is noted that the improvement shown in the previous year in the number of cases attended in the districts has not been maintained, but this decrease may in part be accounted for by the continuing decline in the birth-rate. Twenty-one students, as compared with 24 last year, attended the practice of the hospital, and 21 nurses in training have passed through the hospital. The income for the year was £1390, and the total deficiency on working the institution has been reduced to £995. With reference to the provision of free consultations for women before confinement, and for mothers or guardians of infants up to one year of age, a large amount of valuable work has already been done by the hospital, and only want of accommodation prevents this work being extended. The board further feel that more ample provision should be made in the way contemplated by recent legislation for the work of attending to the health of expectant and nursing mothers and babies. With this view a small committee of the board has been appointed to inquire as to increasing the accommodation of the institution and securing a larger income.

The following journals, magazines, &c., have been received:—Journal of Nervous and Mental Disease, Archives of Pediatrics, Journal of State Medicine, Tropical Diseases Bulletin, Annales de Médecine, La Clinique Ophtalmologique, American Review of Tuberculosis, Annali di Medicina Navale e Coloniale, Transactions of the Society of Tropical Medicine and Hygiene, American Journal of Ophthamology, Ambulance de l'Ocean, Medical Journal of South Africa, Archives of Radiology and Electrotherapy, &c.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Easter Recess.

BOTH Houses of Parliament have adjourned for the Easter Recess. They will resume on April 9th.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 20TH.

Rations of Invalids.

Sir C. KINLOCH-COOKE asked the Parliamentary Secretary to the Ministry of Food whether he was now in a position to give any further information with regard to the matter of rations to invalids.—Mr. CLYNES replied: The Ministry of Food, on the advice of its scientific advisers, and after consultation with physicians, hospital managers, and representatives of the Local Government Board, has drawn up approved scales of hospital dietaries which will shortly be published.

THURSDAY, MARCH 21ST.

Discharged Tuberculous Soldiers.

Major D. DAVIES asked the Parliamentary Secretary to the Ministry of Pensions whether he could state what provision had been made in England, Scotland, Ireland, and Wales respectively for the training of discharged tuberculous soldiers; whether he could also state the number of occupations or industries suitable for discharged tuberculous men for which this training was provided; and whether he could inform the House what further steps he proposed to take to make further provision of a similar character.—Sir A. GRIFFITH-BOSCAWEN replied: I am fully alive to the necessity of providing for the treatment and training of men suffering from tuberculosis. Farm colonies at which treatment will be provided are being established at various places in England, Scotland, and Wales, and arrangements are well in hand in connexion with colonies in Dorset, Cambridgeshire, Cheshire, and North Wales. In the case of Dorset application forms for admission to the colony have already been sent out, and the Ministry is awaiting replies. The number of industries and occupations in which training will be provided is about 12, comprising market gardening, pig keeping, poultry keeping, bee keeping, fruit culture, intensive horticulture, forestry, and rough carpentry and smithy work. Further proposals are under consideration for the establishment of colonies in Edinburgh, Northumberland, Durham, Norfolk, Suffolk, Worcestershire, and South Wales. As the need arises in other areas similar schemes will be considered.

Mr. HOGGE: How much has the Ministry of Pensions given to any of these establishments?—Sir A. GRIFFITH-BOSCAWEN: I do not know, but we have considered the matter in some cases.

Mr. HOGGE: In very few.

Major D. DAVIS: How many cases have been already treated?—Sir A. GRIFFITH-BOSCAWEN: The first of these places is being opened in Dorset, and forms of application are now being sent in.

Lord H. CAVENDISH-BENTINCK: Has the Ministry really contributed to the original cost of any of these schemes?—Sir A. GRIFFITH-BOSCAWEN: We have already contributed in some cases a considerable sum towards the establishment of these farm colonies.

Notification of Births Act in Scotland.

Major ASTOR asked the Secretary for Scotland whether he would state how much money had been spent during the year 1917 in providing treatment under the Notification of Births (Extension) Act, 1915.—Mr. MUNRO replied: I regret that this information is not available. For the local financial year ending May, 1917, expenditure as far as claimable against the maternity and child welfare grant may be estimated at £10,300. The actual expenditure, no doubt, exceeded that figure.

Major ASTOR asked how many local authorities had in operation schemes for providing treatment for mothers and young children under the Notification of Births (Extension) Act, 1915.—Mr. MUNRO answered: Schemes have been sanctioned for 53 local authorities, and 14 other local authorities have schemes in operation which have not yet been formally sanctioned. There are 243 local authorities which have no scheme in operation, but a number of them are in communication with the Local Government Board for Scotland with a view to submitting schemes for approval.

Dr. Cuthbert Christy has been awarded the Gill Memorial of the Royal Geographical Society for his surveys and explorations in Central Africa.

Vacancies.

For further information refer to the advertisement columns.

Ashton-under-Lyne District Infirmary, Lancashire.—Asst. H.S. £200.
Bethnal Green Metropolitan Borough.—Female Asst. M.O.H. £400.
Birkenhead Borough Hospital.—Jun. H.S. £170.
Birmingham City Hospital, West Heath.—Med. Supt. £400.
Bristol Royal Infirmary.—H.P. and H.S. £120.
Bromley Education Committee.—M.O. £1 1s. each attendance.
Cambridgeshire Mental Hospital.—Sen. Asst. M.O. £7 7s. per week.
Cardiff, King Edward VII.'s Hospital.—H.S. £200.
Chichester, Graylingwell War Hospital.—Res. M.O. £1 per day.
Coventry Education Committee.—Temp. Asst. School M.O. £350.
Derby, Derbyshire Royal Infirmary.—H.P. and C.O. £200.
Glamorgan County Council.—Temp. M.O. £400
Hospital for Women, Soho-square, W.—Res. M.O. £80.
Ilford Urban District Council.—Temp. M.O.H. £550.
Ipswich, County of East Suffolk.—Asst. M.O.H. £375.
Leeds General Infirmary.—Res. Oph. Off. £100.
Liverpool University Faculty of Medicine.—Sen. Dem. in Anat. £175.
Manchester Children's Hospital.—M.O. £200.
Military Hospital Endell-street, W.C.—Female Asst. Surg.
National Hospital for the Paralysed and Epileptic.—Jun. H.P. £150.
Netley, Welsh Hospital.—M.O.
Prince of Wales's General Hospital, Tottenham, N.—H.P. and H.S. £250 each. Junior H.S. £200.
Queen's Hospital for Children, Hackney-road, E.—Res. M.O. £150.
Rochdale Infirmary and Dispensary.—M.O.
Rochester, St. Bartholomew's Hospital.—Res. Clin. Asst. £110.
Royal South Hants and Southampton Hospital.—H.P. £100.
St. Helens, County Borough of.—Temp. Asst. M.O.H. £350.
Sheffield, City Education Committee.—Asst. School M.O. £350.
Sheffield Royal Infirmary.—H.S. £120.
Whitehaven and West Cumberland Infirmary.—Res. H.S. £150.

Births, Marriages, and Deaths.

BIRTHS.

HOSKYN.—On March 18th, at Whitehall-road, Rugby, the wife of C. R. Hoskyn, M.D., B.S. Lond., of a daughter.

PERN.—On March 24th, at Botley, Hants, the wife of Alfred S. Pern, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

COLE—MALLETT.—On March 21st, at Christ Church, Beckenham, Thomas Philips Cole, M.B., B.S. Lond., Captain, R.A.M.C., to Doris Kathleen Irene, younger daughter of Mr. and Mrs. H. S. Mallett, of "Sylvanhurst," Beckenham.

PEREZ—GRIFFIN.—On March 13th, at Walton-on-Thames, Victor Perez, M.B., B.S. Lond., to Lilian Griffin, late Q.A.I.M.N.S.R.

SEDGWICK—GERRIE.—On March 20th, at St. Andrew's Church, Nottingham, C. Humphrey Sedgwick, M.B., B.C. Cantab., to Annie Jane, daughter of the late John Gerrie and Mrs. Gerrie, Thornbank, Insch, Aberdeenshire.

TANNER—HUMPHRIES.—On March 14th, at St. Margaret's, Plumstead, by the Rev. A. Thompson, W. E. Tanner, M.S., F.R.C.S., temporary Captain, R.A.M.C., to Marie Louise, daughter of Mr. and Mrs. Edwin Humphries, Plumstead Common.

DEATHS.

ALDERSMITH.—On March 24th, at Carlton Lodge, Horsham, suddenly, of heart failure, Herbert Aldersmith, M.B. Lond., F.R.C.S., Medical Officer to Christ's Hospital for 42 years, aged 70.

BLANCHETTE.—On March 22nd, at Middleton Hall-road, King's Norton, Lieutenant Charles Matthew Blanchette, R.A.M.C.

FAIRLES.—On March 21st, 1918, at 93, Edgware-road, London, W., Ambrose William Fairles, M.D., aged 68 years. R.I.P.

MCNEIL.—On March 16th, at Claremont, Perth, Western Australia, Andrew McNeil, M.B., C.M.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

SOCIETIES.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY, April 5th.—8.30 P.M., Paper:—Dr. R. Hutchison: The Medical Aspect of the Food Question. To be followed by a discussion.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

TUESDAY, April 2nd.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Arthur Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Out-patients each day at 2.30 P.M.

(Details of the Post-Graduate Course were given in the first issue of the month.)

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 26th, 1918.

Date.	Rain-fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 20	0·05	75	60	40	45	48	Fine
,, 21	...	90	61	38	41	42	Overcast
,, 22	...	100	68	39	43	45	Fine
,, 23	...	84	67	40	44	47	Fine
,, 24	...	95	69	40	38	41	Fine
,, 25	...	87	51	41	44	47	Cloudy
,, 26	...	75	48	36	37	40	Fine

Other information which we have been accustomed to give in these "Readings" is withheld for the period of the war.

BOOKS, ETC., RECEIVED.

APPLETON AND CO., London and New York.
Locomotor Ataxia. By W. J. M. A. Maloney, M.D. 15*s.*

BAILLIÈRE, TINDALL, AND COX, London.
Aids to Rational Therapeutics, with U.S.A. Equivalents. By R. W. Leftwich, M.D. 3*s.* 6*d.*

BALE, JOHN, SONS, AND DANIELSSON, London.
Human Intestinal Protozoa. By Temp. Lieut.-Col. C. W. Wenyon, R.A.M.C., and Temp. Capt. F. W. O'Connor, R.A.M.C. 10*s.* 6*d.*

CHURCHILL, J. AND A., London.
Manual of Bacteriology. By R. Tanner Hewlett, M.D. Sixth edition. 14*s.*
Water Analysis. By J. C. Thresh, M.D. Ninth edition. 3*s.*

CONCRETE UTILITIES BUREAU, Catherine-street, Aldwych, London.
Concrete Cottages, &c. By A. Lakeman, M.S.A. 5*s.*

FROWDE, H., AND HODDER AND STOUGHTON, London.
Diagnosis and Treatment of Venereal Diseases in General Practice. By L. W. Harrison, Lieut.-Col., R.A.M.C. 21*s.*

HOEPLI, ULRICO, Milan.
L'Ottica di Euclide. By Prof. G. Ovio. 7.50 lire

KIMPTON, HENRY, London.
Diseases of Women. By H. S. Crossen, M.D. 32*s.*
Surgery and Diseases of the Mouth and Jaws. By V. P. Blair, M.D. Third edition. 30*s.*

LEA AND FEBIGER, Philadelphia and New York.
Text-book of First Aid. By A. C. Burnham, M.D. $2.
Poliomyelitis in all its Aspects. By J. Ruhrah, M.D., and E. E. Mayer, M.D. $3.25.
Blood Pressure: its Clinical Application. By G. W. Norris, M.D. 3 ed. $3.50.
Thyroid and Thymus. By André Crotti, M.D. $10.
Applied Anatomy and Kinesiology. By W. P. Bowen, M.S. $3.50.

LEWIS, H. K., AND CO., London.
Tumours. By W. D'E. Emery, M.D. 5*s.*
Anti-Malarial Work in Macedonia. By W. G. Willoughby, M.D., and L. Cassidy, M.B. 3*s.* 6*d.*
Systematic Treatment of Gonorrhœa. By N. P. L. Lumb, Temp. Capt., R.A.M.C. 4*s.* 6*d.*
Influence of Sunlight in Production of Cancer of Skin. By C. N. Paul, M.B. 10*s.* 6*d.*
Medical Electricity. By H. Lewis Jones. Revised and edited by L. W. Bathurst, M.D. 15*s.*

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.
Complete Medical Pocket Formulary. By J. C. Wilson, M.D. Thoroughly revised by C. H. Turner, M.D. 10*s.* 6*d.*
The Spleen and Anæmia. By R. M. Pearce, M.D., and others. 21*s.*
Principles and Practice of Milk Hygiene. By L. A. Klein, V.M.D. 12*s.* 6*d.*

LONG, JOHN, Limited, London.
Those—Dash—Amateurs. By Mrs. John Swift Joly. 2*s.* 6*d.*

MASSON ET CIE, Paris.
Précis de Radiodiagnostique. Par F. Jaugeas. 20 fr.
Collection Horizon. 4 fr. each.—
Premières Heures du Blessé de Guerre. Par P. Bertein et A. Nunier. 2 ed.
Localisation et Extraction des Projectiles. Par L. Ombrédanne et R. Ledoux Lebard. Second edition.
Les Blessures du Cerveau. Par Charles Chatelin. Second edition.
Evolution de la Plaie de Guerre. Par A. Policard.

OXFORD UNIVERSITY PRESS, London.
Burns and their Treatment. By J. M. H. Macleod, M.D. 6*s.*
Scopolamine-Morphine. By W. O. Greenwood, M.D. 6*s.*

PITMAN, SIR ISAAC, AND SONS, London.
Gums and Resins. By E. J. Parry, B.Sc. 2*s.*

POOR LAW PUBLICATIONS, Furnival-street, London, E.C.
Practical Surgical Nursing for Probationers. By Miss C. S. Yapp. 3*s.* 6*d.*

THACKER, SPINK, AND CO., Calcutta.
Diabetes: Its Causation and Treatment (with Special Reference to India). By E. E. Walters, Lieut.-Col., I.M.S. 4*s.*

UNIVERSITY OF CHICAGO PRESS, Illinois.
First Lessons in Spoken French for Doctors and Nurses. By E. H. Wilkins and others.

EDITORIAL NOTICES.

In consequence of the pressure on our space and the shortage of paper, the Editor may be compelled to abbreviate communications, as an alternative to their rejection, when time does not allow them to be reconsidered by their authors.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

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Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Notes, Short Comments, and Answers to Correspondents.

PASSPORTS FOR CONSUMPTIVE PERSONS.

THE question was raised last week in the House of Commons as to the withholding from an applicant of a passport enabling him to proceed to South Africa although he had produced the medical certificates required to show that he was suffering from pulmonary consumption, which rendered residence in this country dangerous to his life. Mr. Balfour, however, assured the House that the refusal was based at first on an objection raised by the Ministry of National Service to the applicant leaving this country, and later—since he wished to take his wife and infant with him—on the Admiralty regulation restricting women and children from travelling overseas. The reply of the Foreign Secretary will serve to correct the impression that hindrances are being placed in the way of a tuberculous patient being sent to a climate desirable to prolong his life, especially since, in answer to a further question, he stated definitely that those responsible for the issuing of passports do consider the health of applicants. It is, of course, right and fair that, with the present severe restrictions upon cross-Channel traffic, permits should be limited to cases of necessity, and the form of the medical certificate now required by the Military Permit Office will serve to ensure this. The terms of the certificate are as follow:—

1. That the journey is an *absolute* necessity.
2. For the purpose of a stay at ——— (naming the specific destination).
3. That there is no health resort in Great Britain which would meet the case.
4. That the visit should extend over a period of —— months.
5. That it is essential for the patient to be accompanied, and by whom.

Urgent invalids are thus assured facilities so long as any facilities at all can be granted.

COLONIAL HEALTH REPORTS.

Nigeria.—In his report for 1916, recently presented to Parliament, Sir Frederick Lugard, G.C.M.G., C.B., the Governor-General, states that at the beginning of the year there were about 762 Europeans in the Northern Provinces and about 2000 in the Southern Provinces and Colony, a total of 2762, of whom some 1600 were officials. The total native population of all the provinces and the colony is estimated at 17,250,000, the average density in the Northern Provinces being about 37, and in the Southern Provinces and Colony about 98, to the square mile.

In the Northern Provinces malaria is responsible for about a quarter of the whole number of patients receiving medical attention. Dysentery shows a considerable decrease. Two cases of trypanosomiasis occurred, but yellow fever, which was reported in 1915, has fortunately not again appeared. Among the natives there does not seem to have been any increase of sickness generally, and there was no epidemic of disease. Malaria, dysentery, and bronchial and venereal affections have been the chief complaints for which relief has been sought.

In the Southern Provinces, owing to the large population and the shortage of staff, only a very small percentage of the people come under the notice of the medical officers. Compulsory registration of births and deaths is still confined to Lagos and Ebute Metta, and the causes of death are frequently conjectural, so few being certified by a medical man. The usual seasonal variations in the sick list have been observed; there has been a slight increase in the number of cases of chicken-pox, but neither in 1915 nor 1916 was there an epidemic of small-pox. Malaria of the æstivo-autumnal type is the most common of insect-borne diseases. The total number of cases of malaria treated was 8740, of which 543 were in Europeans. One case of yellow fever in a European occurred on board a steamer in Lagos harbour and proved fatal. Three cases of trypanosomiasis were treated. There was a slight rise in the number of cases of blackwater fever, 22 having occurred. One native and 3 Europeans died of the disease. Only 10 cases of beri-beri, with 1 death, were recorded. 182 cases of tuberculosis, with 47 deaths, were treated. Venereal disease is very common, especially in the open ports. Ankylostomes are extremely common and have been treated in 686 cases; this is a large increase on the previous year, and is probably due to the more ready recognition of the conditions to which they may give rise on the part of medical officers, and the consequent search for the parasite. It has so far been impossible to treat ankylostomiasis on a large scale. Guinea-worm causes much sickness and disability in up-country stations where the people are dependent on shallow water-pools for their supply of drinking-water.

In various regions the rainfall of 1916 greatly exceeded that experienced in any preceding years since the occupation of the country, many weak spots, until then unsuspected, being discovered, and it became evident that the sanitary lay-out arranged at numerous townships would have to be considered *de novo*. This was particularly true of the riparian settlements along the river Benue. The people were actually catching fish in the street of one old-established town; the greater portion of the new trading quarter of another was washed away bodily, and numerous bodies of buffalo and other big game, surprised and drowned by the suddenly rising river, kept floating down stream.

In the Northern Provinces the principal hospitals and dispensaries are at Kaduna, Lokoja, Kano, Zungeru, and Zaria. In 1916 the total number of European in-patients was 241 (of whom 14 died), and of out-patients 749, whilst the native in-patients numbered 6265 (of whom 227 died), and out-patients 15,581. In the Southern Provinces the principal hospitals are at Lagos, Calabar, Warri, Ibadan, Onitsha, Forcados, Sapele, and Port Harcourt. There are in addition native hospitals at most out-stations. The European hospitals are all mosquito-proofed, the native hospitals being only partially protected. The European in-patients in 1916 numbered 450, and the out-patients 2704 (deaths 13), whilst the native in-patients totalled 13,121, and out-patients 105,972 (deaths 724). Eighty lepers were treated at the asylums at Yaba and Calabar.

The preparation of, and segregation plans for, stations, with a view to ultimately establishing a definite system of segregation of Europeans, has been continued and the plans of three stations have been finally approved.

THE PROTECTION OF CAMELS AGAINST BLOOD-SUCKING FLIES.

Mr. H. E. Cross, M.R.C.V.S. (*Bull. No. 76, Agric. Res. Inst., Pusa*) has experimented with a number of emulsions with a view to finding an agent whereby camels may be protected against attacks of blood-sucking flies. Kerosine oil emulsion, tara-mira (*Eruca sativa*) oil emulsion, an emulsion containing eucalyptus and turpentine, asafœtida solution, chirpine oil emulsion, creosol emulsion, Jensen's emulsion, citronella oil, aniseed oil, cod-liver oil, and castor oil have all been tried; but of these the only one that prevented *Tabanidæ* from attacking for any length of time was castor oil. None of the other preparations have any practical value, for as soon as the emulsions dry they lose their repellent action.

A REAL PHYSICAL GRIEVANCE.

To the Editor of THE LANCET.

SIR,—As a general practitioner of 30 years' standing I am writing through you to those in authority in order to point out a very real physical grievance to which our women motor-drivers are exposed.

There have been under my care lately cases of women drivers suffering from atony of the bladder and cystitis due to over-distension in the performance of their duties. They tell me that very rarely is any provision for their relief afforded, and though they take no fluid all day they frequently suffer badly from distension due to the absence of the smallest forethought on the part of those driven. One lady told me she often had to drive officers from London to a camp and back, a journey of many miles. On her arrival she was always asked to lunch in mess, previously being invited to wash her hands, no provision for a less literal interpretation being provided, with the usual result of all but intolerable distension. The worst offenders are too young to remember that a bladder is an essential part of a woman's physical equipment. The older officers, fathers of families, are the most considerate, I understand, but I venture to hope that a suggestion from you may help in this matter.

I am, Sir, yours faithfully,

March 25th, 1918. E. A. B.

*** We understand our correspondent's wise note to imply that the provision is there but the opportunity to use it not granted. The better educated the chauffeuse the less hesitation has she in mentioning the fact that she is going away for a few minutes. The fare can only give the opportunity, which is not the same thing as providing the retreat, but we do not understand our correspondent to imply that this is wanting.—ED. L.

"ANIMAL LIFE AND HUMAN PROGRESS."

Professor W. A. Herdman, F.R.S., delivered the eighth lecture of this series on March 20th at King's College, London, his subject being Our Food from the Sea. Sir Arthur Yapp presided. There was probably no time, said the lecturer, when the harvest of the sea was of more importance to the nation than at present, and he believed that that importance would continue for many years after the end of the war. A better appreciation of the food value of fish was much needed, as well as more encouragement for those engaged in conserving and developing the sources of supply. Our home fisheries alone covered at least 400,000 square miles before the war, and the supply of fish to our markets up to that time had been increasing year by year. Between 1888 to 1912 the steam trawling and cold storage led to a doubling of the supply. Fishermen were now the hunters of the sea, but by scientific method they might become marine farmers, taking a place comparable with that of the agriculturist. Touching on the various kinds of fish and their food value, the lecturer exhibited a table comparing salt herring with fresh cod. The former gave on percentage analysis: fat, 21; protein, 22; ash and salt, 9; water, 45; while the figures for cod were: fat, 0·3; protein, 17; ash, 1·3; with water, 82. The proportion of fat in herring might vary from 5 to 42 per cent. and depended, he said, upon the species and also on the season in which it was caught. The herrings analysed came from the Manx fisheries in August, when they were in prime condition. Salmon sprats and sardines were also rich in fat, but cod and most other fish on the market had little. Fish caught in summer made valuable winter foods, and it was necessary to find out the best means of preserving those not eaten soon after catching. Out of a yearly catch of about 12 million cwt. of herrings before the war we exported 10 million cwt., reserving only one-sixth of the total for home consumption. This applied, though not in so large a proportion, to other fish. Speaking of the possible depletion of our fisheries, Professor Herdman said that there was no reason to be anxious about the supply of round fish—cod, herring, or whiting, for example—but flat fish might be diminished locally as they did not move from place to place to the same extent. Experiments had shown that artificial culture was probably the best method of preventing depletion. Cod larvæ could be produced in hatcheries at a cost of 2000 for 1*d*., and if only one out of this number escaped its enemies in the sea the gain would be great. By means of hatcheries the tilefish (*Lopholatilus chamæleonticeps*) had been introduced into the U.S.A., the Government making the newcomer popular by appropriate advertisement. The catch of a single trawler during less than a month covered the whole expense of creating a market. Professor Herdman concluded his instructive lecture by explaining the methods of determining the age of fish by means of markings on the otoliths and scales and the important bearing which a knowledge of the food of fishes played in successful harvests of the sea. One direction for future advance would be, he felt sure, the cultivation of shell-fish on some of our barren shores, experience having already shown much good from transplanting molluscs from overcrowded beds to more roomy lodgings.

THE ROYAL MATERNITY CHARITY.

THE object of this charity is to provide medical attendance when required, midwives, and medicines gratuitously to poor married women in their own homes. The 161st annual report, dealing with the year 1917, shows that there were 492 cases attended, 502 births, of which 278 were males, 224 females, and 10 twins. Stillbirths numbered 11 and 5 infants died, but among the mothers, whose ages varied from 18 to 49, there were no deaths. Since the outbreak of the war over 1100 wives of sailors and soldiers have been helped. The balance-sheet shows an overdrawn account to the extent of nearly £3000, or about £200 more than last year. In view of the good work done by this charity it ought to receive a larger measure of financial support.

THE MEDICAL FEES OF COLLIERY DOCTORS.

A CONFERENCE of Durham mine workers was held at Durham on Saturday last to protest against the proposal of certain colliery doctors to increase their medical fee from 9*d*. to 1*s*. per fortnight. Mr. W. S. Hall, who presided, said that the miners resented the demand, contending that the medical men were already getting a very good sum for the services they were rendering. They must remember that there was a very much reduced medical staff, and the result was that many districts had to endure all kinds of inconvenience. Mr. Newton (Houghton) said in his district the British Medical Association and the Colliery Company had agreed that 1*s*. per fortnight should be deducted from the men's wages without the miners being consulted. The miners had refused to pay the extra fee, with the result that the doctors had ceased attendance. The Stargate delegate said that the miners in his district would do without a doctor before agreeing to pay the additional rate. The Ryhope delegate pointed out that they had four of the finest doctors who ever stood on shoe leather. He thought every district should decide their case on its merits. The South Moor representative remarked that there was no profiteering in the country compared with that of the British Medical Association, forgetting that the demand for increased pay for doctors has followed on increased wages for the patients, while doctor and patient alike suffer from increased work and expenses.

A resolution was carried disapproving of the demand, and calling upon the British Medical Association to reconsider its attitude. Failing a satisfactory arrangement the conference recommended the formation of district medical funds to meet and pay for all medical assistance.

C .H. W.—The capillary stagnation is not universal, but probably occurs chiefly in the deeper tissues, and more particularly in the muscles. Obviously a pallid skin cannot be full of stagnant blood.

R. McD. is referred to his medical adviser, who will know how to deal with the matter.